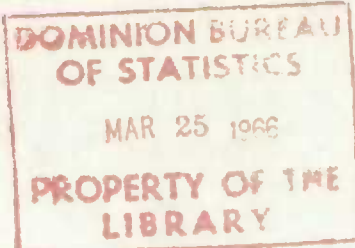


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ANNUAL



MANUFACTURERS OF ELECTRICAL INDUSTRIAL EQUIPMENT

1963

ANNUAL CENSUS
OF MANUFACTURES

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MASSACHUSETTS DEPARTMENT OF REVENUE

RECEIPT

1961

RECEIVED

FOR PAYMENT

OF TAXES

AND FEES

PAID BY

THE

STATE OF

MASSACHUSETTS

TO THE

DEPARTMENT OF

REVENUE

ON

BEHALF OF

THE

STATE OF

MASSACHUSETTS

MANUFACTURERS OF ELECTRICAL INDUSTRIAL EQUIPMENT

1963

Data presented in this report under the heading of Manufacturers of Electrical Industrial Equipment reflect implementation of the revised Standard Industrial Classification (S.I.C.) and the New Establishment Concept which are being used by the Dominion Bureau of Statistics in its compilation of industry statistics—see items "Standard Industrial Classification" and "Establishment" in the Explanatory Notes section of this report.

For statistical purposes the industry titled Manufacturers of Electrical Industrial Equipment covers the operations of establishments primarily engaged in manufacturing electric motors, generators and other electric power equipment for use in the generation, transmission and utilization of electric energy. Important products of this industry are steam turbine generator sets, motors (except railway, motor vehicle and aircraft), generators, transformers, switchgear, pole-line hardware, lightning arresters, electric welding equipment, electric meters. Establishments primarily engaged in manufacturing electric wire and cable are in Industry No. 338—Manufacturers of Electric Wire and Cable.

SYMBOLS

The following standard symbols are used in Dominion Bureau of Statistics publications:

- .. figures not available.
- ... figures not appropriate or not applicable.
- nil or zero.
- amount too small to be expressed.
- P preliminary figures.
- * revised figures.
- x confidential to meet secrecy requirements of the Statistics Act.

TABLE 1 A. Principal Statistics classified by Province, 1962 and 1963

Year and province	Establishments	Manufacturing activity							Total activity				
		Production and related workers			Cost of fuel and electricity	Cost of materials and supplies	Value of shipments of goods of own manufacture	Value added	Working owners and partners		Total employees		Total value added
		Number	Man-hours paid	Wages					Number	Withdrawals	Number	Salaries and wages	
	No.		'000			\$'000				\$'000		\$'000	
1961													
Totals	98	9,856	21,382	43,786	2,365	86,553	218,951	129,640	x	x	16,558	82,495	135,562 ^r
1962													
Newfoundland	—	—	—	—	—	—	—	—	—	—	—	—	—
Prince Edward Island	—	—	—	—	—	—	—	—	—	—	—	—	—
Nova Scotia	—	—	—	—	—	—	—	—	—	—	—	—	—
New Brunswick	—	—	—	—	—	—	—	—	—	—	—	—	—
Quebec	15	1,126	2,381	4,271	233	8,627	21,606	12,772	—	—	1,751	7,877	13,378
Ontario	73	9,556	20,539	45,428	2,061	84,415	223,443	140,533	x	x	15,809	82,412	144,699
Manitoba	2	299	624	1,041	47	3,161	6,613	3,438	—	—	399	1,558	3,478
Saskatchewan	2												
Alberta	4												
British Columbia	7	150	365	764	30	2,332	4,462	2,006	—	—	233	1,286	2,014
Yukon and Northwest Territories	—	—	—	—	—	—	—	—	—	—	—	—	—
Totals	103	11,131	23,909	51,504	2,371	98,555	256,124	158,749	x	x	18,192	93,133	163,568
1963													
Newfoundland	—	—	—	—	—	—	—	—	—	—	—	—	—
Prince Edward Island	—	—	—	—	—	—	—	—	—	—	—	—	—
Nova Scotia	—	—	—	—	—	—	—	—	—	—	—	—	—
New Brunswick	—	—	—	—	—	—	—	—	—	—	—	—	—
Quebec	16	1,114	2,323	4,485	239	9,138	21,637	11,982	—	—	1,621	7,570	13,199
Ontario	80	10,675	22,708	51,206	2,315	93,474	260,109	164,263	5	28	17,369	92,035	169,421
Manitoba	2	292	610	1,050	51	3,628	7,239	3,669	—	—	413	1,660	3,890
Saskatchewan	2												
Alberta	4												
British Columbia	8	174	371	832	37	2,555	5,114	2,638	—	—	276	1,485	2,653
Yukon and Northwest Territories	—	—	—	—	—	—	—	—	—	—	—	—	—
Totals	112	12,255	26,011	57,573	2,643	108,794	294,099	182,553	5	28	19,679	102,750	189,164

TABLE 1 B. Principal Statistics classified by Size Groups based on Shipments of Goods of Own Manufacture, 1962 and 1963

Size group	Estab- lish- ments	Manufacturing activity							Total activity				
		Production and related workers			Cost of fuel and elec- tricity	Cost of materials and supplies	Value of shipments of goods of own manu- facture	Value added	Working owners and partners		Total employees		Total value added
		Number	Man- hours paid	Wages					Number	With- drawals	Number	Salaries and wages	
	No.		'000				\$'000			\$'000		\$'000	
1962													
Under \$10,000													
\$ 10,000 to \$ 24,999	7	17	30	53	3	163	222	84	—	—	28	96	93
25,000 " 49,999	9	41	86	153	7	357	724	401	x	x	58	217	417
50,000 " 99,999	9	65	129	196	7	690	1,282	627	—	—	91	316	638
100,000 " 199,999	21	318	660	1,111	60	2,833	6,199	3,309	—	—	506	2,119	3,736
200,000 " 499,999	15	669	1,343	2,163	108	5,445	10,909	5,390	—	—	950	3,439	5,749
500,000 " 999,999	31	3,149	6,902	12,891	592	35,779	74,583	40,133	—	—	5,075	23,156	41,851
1,000,000 " 4,999,999	11	6,872	14,759	34,938	1,594	53,289	162,204	108,805	—	—	11,115	61,158	109,866
5,000,000 and over													
Head offices, sales offices and auxiliary units	...	...	...	...	...	...	...	...	...	...	369	2,631	1,218
Totals	103	11,131	23,909	51,504	2,371	98,555	256,124	158,749	x	x	18,192	93,133	163,568
1963													
Under \$10,000													
\$ 10,000 to \$ 24,999	4	7	14	20	1	29	70	48	—	—	10	28	48
25,000 " 49,999	5	21	44	70	1	156	167	2	2	8	34	128	40
50,000 " 99,999	7	32	65	100	5	250	525	278	3	21	47	166	298
100,000 " 199,999	13	91	188	350	17	879	1,759	836	—	—	128	536	849
200,000 " 499,999	21	401	817	1,337	110	3,433	7,025	3,884	—	—	645	2,660	4,443
500,000 " 999,999	18	623	1,300	2,307	140	6,416	12,926	6,620	—	—	853	3,556	7,098
1,000,000 " 4,999,999	32	3,426	7,196	13,636	662	36,753	79,392	41,122	—	—	5,331	24,525	43,844
5,000,000 and over	12	7,654	16,389	39,752	1,707	60,876	192,235	129,762	—	—	12,334	69,132	131,874
Head offices, sales offices and auxiliary units	...	...	...	...	...	...	...	...	...	...	297	2,018	668
Totals	112	12,255	26,011	57,573	2,643	108,794	294,099	182,553	5	28	19,679	102,750	189,164

TABLE 1 C. Principal Statistics classified by Size Groups based on Manufacturing Value Added, 1962 and 1963

Size group	Estab- lish- ments	Manufacturing activity							Total activity				
		Production and related workers			Cost of fuel and elec- tricity	Cost of materials and supplies	Value of shipments of goods of own manu- facture	Value added	Working owners and partners		Total employees		Total value added
		Number	Man- hours paid	Wages					Number	With- drawals	Number	Salaries and wages	
	No.		'000				\$'000			\$'000		\$'000	
1962													
Under \$10,000													
\$ 10,000 to \$ 24,999	4	11	18	26	3	75	102	32	x	x	17	48	42
25,000 " 49,999	5	11	24	48	1	172	247	95	—	—	17	70	91
50,000 " 99,999	6	29	57	110	5	429	660	257	x	x	50	182	272
100,000 " 199,999	12	97	206	338	13	869	1,780	853	—	—	136	551	863
200,000 " 499,999	18	281	571	982	63	2,701	5,644	2,753	—	—	439	1,834	2,997
500,000 " 999,999	17	661	1,336	2,153	102	6,054	12,070	6,125	—	—	949	3,491	6,675
1,000,000 " 4,999,999	16	995	2,165	3,916	169	13,680	25,715	12,221	—	—	1,608	7,086	12,939
5,000,000 and over	19	3,472	7,463	14,715	747	33,993	77,957	44,412	—	—	5,801	27,922	46,008
Head offices, sales offices and auxiliary units	6	5,573	12,069	29,217	1,268	40,583	131,949	92,002	—	—	8,806	49,317	92,462
Totals	103	11,131	23,909	51,504	2,371	98,555	256,124	158,749	x	x	18,192	93,133	163,568
1963													
Under \$10,000													
\$ 10,000 to \$ 24,999	3	9	20	25	—	75	98	6	—	—	19	53	45
25,000 " 49,999	5	11	22	38	1	39	101	74	2	8	13	43	74
50,000 " 99,999	11	54	110	194	9	769	1,138	371	3	21	83	344	403
100,000 " 199,999	10	62	129	241	13	576	1,237	628	—	—	89	371	628
200,000 " 499,999	15	262	518	927	72	2,818	5,300	1,935	—	—	430	2,010	2,802
500,000 " 999,999	24	789	1,642	2,800	186	7,776	15,220	7,716	—	—	1,129	4,737	8,546
1,000,000 " 4,999,999	14	947	1,968	3,501	146	10,178	20,521	10,409	—	—	1,445	5,895	11,009
5,000,000 and over	23	3,755	7,873	15,865	781	37,652	87,568	48,834	—	—	5,911	28,735	50,964
Head offices, sales offices and auxiliary units	7	6,366	13,732	33,982	1,434	48,912	162,916	112,579	—	—	10,263	58,543	114,024
Totals	112	12,255	26,011	57,573	2,643	108,794	294,099	182,553	5	28	19,679	102,750	189,164

TABLE 1 D. Principal Statistics classified by Size Groups based on Total Value Added, 1962 and 1963

Size group	Estab- lish- ments	Manufacturing activity							Total activity				
		Production and related workers			Cost of fuel and elec- tricity	Cost of materials and supplies	Value of shipments of goods of own manu- facture	Value added	Working owners and partners		Total employees		Total value added
		Number	Man- hours paid	Wages					Number	With- drawals	Number	Salaries and wages	
	No.		'000			\$'000				\$'000		\$'000	
1962													
Under \$10,000	4	11	18	26	3	75	102	32	-	-	17	48	42
\$ 10,000 to \$ 24,999	5	11	24	48	1	172	247	95	x	x	17	70	91
25,000 " 49,999	6	29	57	110	5	429	660	257	-	-	50	182	272
50,000 " 99,999	12	97	206	338	13	869	1,780	853	x	x	136	551	863
100,000 " 199,999	18	281	571	982	63	2,701	5,644	2,753	-	-	439	1,834	2,997
200,000 " 499,999	17	662	1,336	2,153	102	6,054	12,070	6,125	-	-	949	3,491	6,675
500,000 " 999,999	16	995	2,165	3,916	169	13,680	25,715	12,221	-	-	1,608	7,086	12,939
1,000,000 " 4,999,999	19	3,472	7,463	14,715	747	33,993	77,957	44,412	-	-	5,801	27,922	46,008
5,000,000 and over	6	5,573	12,069	29,217	1,268	40,583	131,949	92,002	-	-	8,806	49,317	92,462
Head offices, sales offices and auxiliary units	...	...	...	...	...	...	...	...	...	...	369	2,631	1,218
Totals	103	11,131	23,909	51,504	2,371	98,555	256,124	158,749	x	x	18,192	93,133	163,568
1963													
Under \$10,000	7	13	26	44	2	77	161	79	2	8	22	69	89
\$ 10,000 to \$ 24,999	10	52	107	176	5	679	968	291	3	21	74	277	317
25,000 " 49,999	12	71	147	279	17	703	1,445	709	-	-	108	465	744
50,000 " 99,999	12	190	374	584	41	1,717	3,482	1,783	-	-	271	1,021	1,824
100,000 " 199,999	24	720	1,504	2,573	170	7,332	14,398	7,290	-	-	1,065	4,493	7,861
200,000 " 499,999	16	1,009	2,086	3,764	183	10,548	21,100	10,137	-	-	1,520	6,432	11,656
500,000 " 999,999	24	3,834	8,037	16,172	791	38,827	89,630	49,684	-	-	6,059	29,432	51,960
1,000,000 " 4,999,999	7	6,366	13,732	33,982	1,434	48,912	162,916	112,579	-	-	10,263	58,543	114,024
5,000,000 and over	...	...	...	...	...	...	...	...	...	...	297	2,018	668
Head offices, sales offices and auxiliary units	...	...	...	...	...	...	...	...	...	...	297	2,018	668
Totals	112	12,255	26,011	57,573	2,643	108,794	294,099	182,553	5	28	19,679	102,750	189,164

TABLE 1 E. Principal Statistics classified by Size Groups based on Total Employed, 1962 and 1963

Size group	Estab- lish- ments	Manufacturing activity							Total activity				
		Production and related workers			Cost of fuel and elec- tricity	Cost of materials and supplies	Value of shipments of goods of own manu- facture	Value added	Working owners and partners		Total employees		Total value added
		Number	Man- hours paid	Wages					Number	With- drawals	Number	Salaries and wages	
	No.		'000			\$'000				\$'000		\$'000	
1962													
Under 5 employed	6	10	20	34	3	184	360	191	-	-	18	70	192
5- 14 employed	21	111	221	417	18	1,400	2,658	1,376	x	x	166	660	1,433
15- 49 "	28	551	1,188	2,152	109	7,075	14,068	6,571	-	-	776	3,411	6,827
50- 99 "	16	790	1,692	2,907	110	9,060	17,199	8,570	-	-	1,228	5,178	9,055
100-199 "	11	1,010	2,180	3,998	224	12,653	23,677	11,068	-	-	1,637	7,250	12,059
200-499 "	13	2,458	5,230	9,944	497	22,183	52,699	31,663	-	-	3,969	18,031	32,939
500 employed and over	8	6,201	13,377	32,053	1,409	46,000	145,464	99,310	-	-	10,029	55,901	99,645
Head offices, sales offices and auxiliary units	...	...	...	...	...	...	...	...	...	...	369	2,631	1,218
Totals	103	11,131	23,909	51,504	2,371	98,555	256,124	158,749	x	x	18,192	93,133	163,568
1963													
Under 5 employed	8	16	32	52	4	178	463	277	2	8	22	76	277
5- 14 employed	23	127	265	480	23	1,616	2,892	1,244	3	21	196	801	1,319
15- 49 "	24	460	968	1,746	116	5,465	10,908	5,655	-	-	685	3,006	5,632
50- 99 "	21	908	1,879	3,304	204	9,332	18,651	8,946	-	-	1,328	5,771	10,632
100-199 "	13	1,107	2,388	4,839	207	18,069	33,863	16,049	-	-	1,781	8,880	16,523
200-499 "	15	2,813	5,819	11,232	601	22,820	58,319	34,072	-	-	4,451	20,424	36,116
500 employed and over	8	6,824	14,661	35,920	1,487	51,313	169,003	116,309	-	-	10,919	61,774	117,796
Head offices, sales offices and auxiliary units	...	...	...	...	...	...	...	...	...	...	297	2,018	666
Totals	112	12,255	26,011	57,573	2,643	108,794	294,099	182,553	5	28	19,679	102,750	189,164

TABLE 1 F. Principal Statistics classified by Type of Organization, 1962 and 1963

Type of organization	Estab- lish- ments	Manufacturing activity							Total activity				
		Production and related workers			Cost of fuel and elec- tricity	Cost of materials and supplies	Value of shipments of goods of own manu- facture	Value added	Working owners and partners		Total employees		Total value added
		Number	Man- hours paid	Wages					Number	With- drawals	Number	Salaries and wages	
	No.		'000			\$'000				\$'000			\$'000
1962													
Individual ownerships	1	11,131	23,909	51,504	2,371	98,555	256,124	158,749	x	x	17,823	90,502	162,350
Partnerships	1												
Incorporated companies	101												
Cooperatives	-	-	-	-	-	-	-	-	-	-	-	-	-
Head offices, sales offices and auxiliary units .....	...	...	...	...	...	...	...	...	...	...	369	2,631	1,218
Totals	103	11,131	23,909	51,504	2,371	98,555	256,124	158,749	x	x	18,192	93,133	163,568
1963													
Individual ownerships	1	13	27	37	1	99	184	83	5	28	14	40	83
Partnerships	2												
Incorporated companies	109	12,242	25,985	57,536	2,642	108,695	293,915	182,469	-	-	19,368	100,692	188,413
Cooperatives	-	-	-	-	-	-	-	-	-	-	-	-	-
Head offices, sales offices and auxiliary units .....	...	...	...	...	...	...	...	...	...	...	297	2,018	668
Totals	112	12,255	26,011	57,573	2,643	108,794	294,099	182,553	5	28	19,679	102,750	189,164

TABLE 2. Industry Output, Input and Value Added, 1962 and 1963

	Manufacturing activity		Non-manufacturing activities		Total activity	
	1962	1963	1962	1963	1962	1963
\$'000						
Output						
1. Shipments and other revenue	256,124	294,099	34,713	39,631	290,837	333,730
Inventories - Goods of own manufacture:						
Add closing - Goods in process	24,985	22,813	...	...	24,985	22,813
Finished goods	18,714	23,615	...	...	18,714	23,615
Less opening - Goods in process	22,354	26,292	...	...	22,354	26,292
Finished goods	17,795	20,245	...	...	17,795	20,245
2. Net inventory change	3,550	(109)	...	...	3,550	(109)
3. Gross output (1 + 2)	259,675	293,990	34,713	39,631	294,388	333,621
Input						
4. Purchases of goods not of own manufacture .....	...	...	28,634	31,283	28,634	31,283
Inventories - Goods not of own manufacture:						
Add opening .....	...	...	2,089	2,539	2,089	2,539
Less closing .....	...	...	2,476	2,492	2,476	2,492
5. Cost of goods sold (not of own manufacture) .....	...	...	28,247	31,330	28,247	31,330
6. Materials, supplies, components and semi-processed goods	98,555	108,794	1,647	1,647	100,202	110,441
7. Fuel and electricity	2,371	2,643	...	42	2,371	2,685
8. Gross input (5 + 6 + 7)	100,926	111,437	29,894	33,019	130,820	144,456
Census value added (3 - 8)	158,749	182,553	4,819	6,612	163,568	189,164

TABLE 3. Employment and Payroll, 1962 and 1963

Year and province	Employees										Salaries and wages				
	Production and related workers				Adminis- trative and office		Sales and distribution		Total employees		Production and related workers		Adminis- trative and office	Sales and distrib- ution	Total salaries and wages
	Manufacturing		Other												
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Manufacturing	Other			
number										\$'000					
1962															
Newfoundland	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Prince Edward Island	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nova Scotia	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
New Brunswick	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Quebec	876	250	3	2	398	109	90	23	1,367	384	4,271	14	2,888	703	7,877
Ontario	8,017	1,539	19	2	4,048	1,175	808	205	12,888	2,921	45,428	98	30,733	6,153	82,412
Manitoba	279	20	7	-	67	19	6	1	359	40	1,041	31	439	47	1,558
Saskatchewan															
Alberta															
British Columbia	137	13	-	-	49	11	18	5	204	29	764	-	363	159	1,286
Yukon and Northwest Terri- tories	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Totals	9,309	1,822	29	4	4,560	1,314	920	234	14,818	3,374	51,504	143	34,423	7,063	93,133
1963															
Newfoundland	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Prince Edward Island	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nova Scotia	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
New Brunswick	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Quebec	824	290	-	-	299	92	92	24	1,215	406	4,485	-	2,348	737	7,570
Ontario	8,815	1,860	42	3	4,423	1,230	786	210	14,066	3,303	51,206	193	34,229	8,408	92,035
Manitoba	277	15	7	-	89	18	8	1	379	34	1,050	28	541	41	1,660
Saskatchewan															
Alberta															
British Columbia	161	13	-	-	83	16	18	5	242	34	832	-	490	164	1,485
Yukon and Northwest Terri- tories	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Totals	10,077	2,178	49	3	4,874	1,356	902	240	15,902	3,777	57,573	221	37,608	7,349	102,750

TABLE 3A. Production and Related Workers, - Manufacturing Activity, by Months, 1962 and 1963

Month	Establishments reporting monthly detail			
	1962		1963	
	Male	Female	Male	Female
	number			
January	8,450	1,681	9,594	1,993
February	8,564	1,684	9,593	1,996
March	8,713	1,651	9,650	2,011
April	8,798	1,684	9,696	1,991
May	8,987	1,699	9,718	1,970
June	9,204	1,775	10,091	2,097
July	9,236	1,772	10,058	2,066
August	9,370	1,781	10,165	2,099
September	9,438	1,822	10,119	2,138
October	9,390	1,738	9,983	2,087
November	9,455	1,749	9,937	2,085
December	9,392	1,827	9,840	2,118
Average for establishments reporting monthly detail (collected only for large establishments)	9,090	1,741	9,973	2,056
Average for small establishments (only annual averages collected)	219	81	104	122
Average for all establishments	9,309	1,822	10,077	2,178

TABLE 4. Industry Inventories, 1963

Province	Manufacturing				Non-manufacturing	Total inventories
	Raw materials and supplies	Goods in process	Finished goods of own manufacture	Total manufacturing	Products or materials purchased for resale	
book value \$'000						
Opening:						
Newfoundland	—	—	—	—	—	—
Prince Edward Island	—	—	—	—	—	—
Nova Scotia	—	—	—	—	—	—
New Brunswick	—	—	—	—	—	—
Quebec	2, 143	1, 770	1, 881	5, 795	948	6, 743
Ontario	21, 980	23, 633	17, 868	63, 481	1, 504	64, 985
Manitoba	728	518	302	1, 548	—	1, 548
Saskatchewan						
Alberta						
British Columbia	514	370	195	1, 079	88	1, 167
Yukon and Northwest Territories	—	—	—	—	—	—
Totals	25, 365	26, 292	20, 245	71, 902	2, 539	74, 441
Closing:						
Newfoundland	—	—	—	—	—	—
Prince Edward Island	—	—	—	—	—	—
Nova Scotia	—	—	—	—	—	—
New Brunswick	—	—	—	—	—	—
Quebec	2, 253	2, 011	1, 363	5, 626	898	6, 524
Ontario	21, 217	19, 847	21, 598	62, 661	1, 513	64, 174
Manitoba	722	547	382	1, 651	—	1, 651
Saskatchewan						
Alberta						
British Columbia	494	408	273	1, 175	81	1, 256
Yukon and Northwest Territories	—	—	—	—	—	—
Totals	24, 686	22, 813	23, 615	71, 113	2, 492	73, 605

TABLE 5. Purchased Fuel and Electricity Used in Manufacturing Activity, 1962 and 1963

Description	1962		1963	
	Quantity	Cost	Quantity	Cost
		\$'000		\$'000
1. Large establishments which reported commodity detail:				
Bituminous coal:				
(a) From Canadian mines	ton 1, 134	17	1, 143	15
(b) Imported	" 34, 725	382	30, 650	345
Sub-bituminous coal (from Alberta mines only)	" —	—	—	—
Anthracite coal	" 45	1	35	1
Lignite coal	" —	—	—	—
Coke	" —	—	—	—
Gasoline (including gasoline used in cars and trucks)	Imp. gal. 271, 088	101	272, 566	109
Fuel oil including kerosene or coal oil	" 3, 011, 975	337	4, 174, 198	416
Wood	cord 312	3	1	—
Gas:				
(a) Liquefied petroleum gases	Imp. gal. 67, 229	16	8, 865	3
(b) Other manufactured gas	M cu.ft. —	—	—	—
(c) Natural gas	" 182, 213	161	181, 582	188
Other fuel .....	... ..	5	...	20
Electricity purchased	kwh. 145, 666, 537	1, 260	163, 985, 090	1, 411
Steam purchased .....	... ..	33	...	35
2. Estimate for small establishments:				
Fuel and electricity .....	... ..	54	...	101
3. All establishments:				
Total fuel and electricity used .....	... ..	2, 371	...	2, 643

TABLE 6. Materials and Supplies - Manufacturing Activity, 1962 and 1963

Description	1962		1963	
	Quantity	Cost \$'000	Quantity	Cost \$'000
1. Materials used:				
Aluminum:				
Castings	lb. 1,271,491	932	2,096,965	1,372
Wire rods	" 132,796	87	125,097	85
Sheets and strip	" 585,368	330	749,891	432
Other .....	...	832	...	626
Brass and bronze:				
Castings	lb. 1,334,921	1,070	1,522,159	1,159
Wire rods	" 287,802	170	314,707	194
Sheets and strip	" 380,634	253	392,830	257
Other .....	...	181	...	188
Copper:				
Wire rods	lb. 875,374	624	2,531,746	1,294
Sheets and strip	" 1,855,912	1,085	1,767,743	1,061
Tubing and pipe	" 341,039	220	383,015	225
Wire, enamelled	" 8,413,464	5,905	9,281,230	6,514
Wire, other insulated .....	...	4,271	...	3,984
Other .....	...	2,459	...	2,679
Insulating varnishes, japans, enamels and lacquers .....	...	353	...	403
Insulators, porcelain and glass .....	...	2,175	...	2,665
Iron and steel (except alloy):				
Castings:				
Iron	ton 5,568	2,526	6,187	2,557
Steel	" 1,242	898	4,401	1,042
Steel bars and rods	" 15,470	2,548	17,206	2,955
Steel sheets and strip:				
Plain	" 31,707	4,848	29,631	5,452
Galvanized	" 288	51	409	76
Steel wire	" 860	200	1,549	241
Structural steel	" 4,554	770	3,358	616
Other (except alloy) .....	...	878	...	957
Alloy steel:				
Stainless .....	...	330	...	639
Silicon sheets and strips	ton 27,243	9,990	26,531	11,148
Other alloy including tool steel .....	...	581	...	296
Lead	lb. 330,563	60	338,811	64
Mica	" 87,239	103	173,728	165
Motors, electric:				
Under 1 h.p.	No. 12,480	92	14,920	173
1 h.p. and over a.c. or d.c.	" 2,121	38	280	25
Paints, stains, lacquers .....	...	433	...	512
Resins, synthetic .....	...	649	...	721
Resistance wire, ribbon and strip	lb. 11,575	21	65,511	96
Sulphuric acid	" 439,440	19	297,673	7
All other materials and components used ¹ .....	...	46,619	...	52,003
2. Containers and other packaging materials and supplies used .....	...	1,578	...	1,491
3. Operating, maintenance and repair supplies used (excluding fuel) .....	...	3,708	...	3,736
4. Amount paid out to others for work done on materials owned by establishments .....	...	668	...	662
Totals .....	...	98,555	...	108,794

¹ No detailed information on materials used was collected from small establishments, the estimated costs for which are included here. These estimated costs were \$2,690,000, in 1962 and \$516,000 in 1963.

TABLE 7. Shipments of Goods of Own Manufacture, 1962 and 1963

Description	Value	
	1962	1963
	\$'000	
1. Products:		
Electrical industrial equipment:		
Industrial control equipment	28,412	31,187
Converter equipment	7,755	3,633
Electric generators and parts	7,181	15,632
Electric motors and parts	39,761	48,911
Transformers and parts	57,639	71,152
Electrical switchgear and protective equipment (except telephone switchboards)	43,965	46,163
Electric welding apparatus and welding rod	6,104	8,000
Cutouts and fuses	2,578	2,966
Instruments and meters	10,422	11,888
Pole line hardware	7,752	8,225
Miscellaneous electrical equipment:		
Industrial electric heating equipment	754	639
Lighting equipment	1,293	1,528
Telecommunication equipment other than domestic radio and television receiving sets	6,832	2,897
Rectifiers (other than power) (semi-conductor and/or electron tube type) (see Table 8H) .....	..	1,692
Miscellaneous electrical products	2,133	2,169
All other products	30,392 ^f	36,143
2. Amount received in payment for work done on materials and products owned by others	1,141 ^f	910
Less adjustment for value of sales taxes, excise duties and outward transportation charges which could not be deducted from individual commodity items described above	(2,188)	364
Net adjustment for establishments receiving progress payments	4,198	-
Total adjusted value of shipments and work done	256,124	294,099

TABLE 8. Shipments of Selected Goods of Own Manufacture - All Industries
(Includes shipments from other industries which manufacture, as a secondary activity, the commodities listed)

A. Electric Generators and Parts, 1962 and 1963

Item	1962			1963		
	Number	Total rating	Value	Number	Total rating	Value
			\$'000			\$'000
A.c. generators(except for vehicle and marine use)including horizontal water-wheel driven synchronous generators but not including vertical water-wheel synchronous generators:						
Up to and including 100 kw.	565	..	949	822	51,596	1,307
101 to 500 kw.						
501 to 1,500 kw.	12	..	202	67	97,575	1,172
1,501 and above						
A.c. vertical water-wheel driven generators, all ratings	8	..	5,253	}	...	13,154
Accessories and parts for a.c. generators .....	...	...	778			
Steam or gas turbo-driven a.c. generators 5,001 kw. and above						
Totals .....	...	...	7,182	...	...	15,633

TABLE 8. Shipments of Selected Goods of Own Manufacture—All Industries—Continued

B. Electric Motors¹ and Parts, 1962 and 1963

Item	1962			1963		
	Number	Total rating	Value	Number	Total rating	Value
		h.p.	\$'000		h.p.	\$'000
A.c. motors (except for railway and vehicle use):						
Single phase induction:						
1/3 h.p. and under (except shaded pole or universal motors).....	957,467	219,884	12,902	1,049,556	...	14,037
1/2 h.p. and 3/4 h.p.	89,366	53,137	2,203	95,354	..	2,627
1 h.p. to 5 h.p. inclusive-open type.....	11,340	21,576	851	18,150	..	1,312
1 h.p. to 5 h.p. inclusive-enclosed type.....	1,630	3,262	157	670	1,440	88
Polyphase induction:						
1/3 h.p. and under.....	4,205	1,098	132	4,595	1,583	142
1/2 h.p. and 3/4 h.p.	11,127	6,852	417	12,299	8,602	425
1 h.p. to 5 h.p. inclusive-open type.....	22,382	46,275	1,286	23,345	61,973	1,425
1 h.p. to 5 h.p. inclusive-enclosed type.....	10,731	27,235	1,007	12,030	32,244	1,033
6 h.p. to 25 h.p. inclusive-open type.....	6,509	77,103	1,115	7,430	96,455	1,230
6 h.p. to 25 h.p. inclusive-enclosed type.....	6,605	86,147	1,652	6,230	81,978	1,377
26 h.p. to 100 h.p. inclusive-open type.....	1,930	93,729	1,158	2,502	133,288	1,517
26 h.p. to 100 h.p. inclusive-enclosed type.....	1,653	85,485	1,372	1,831	95,651	1,530
101 h.p. to 200 h.p. inclusive-open type.....	436	65,758	967	560	86,130	1,004
101 h.p. to 200 h.p. inclusive-enclosed type.....	192	27,928	560	186	25,883	525
201 h.p. to 1000 h.p. inclusive.....	405	175,006	2,262	624	264,022	3,424
1001 h.p. and over.....	42	74,610	1,083	101	192,050	2,568
Synchronous motors and condensers:						
Up to and including 500 h.p.	32	9,025	148	—	—	—
501 h.p. to 2000 h.p.	86	84,100	616	113	—	692
2001 h.p. and above.....	—	—	—	—	—	—
Accessories and parts for a.c. motors.....	—	—	1,004	—	—	582
Railway and vehicle motors, a.c. and d.c.	—	—	—	—	—	—
Shaded pole type motors, all ratings.....	471,853	—	1,774	258,172	—	2,324
Universal type motors, all ratings.....	76,369	—	338	—	—	960
D.c. motors and generators, including exciters, (except for railway and vehicle use):						
D.c. motors:						
1/3 kw. and under.....	—	—	1,966	—	—	2,286
1/2 kw. and 3/4 kw.	—	—	—	—	—	—
D.c. motors or generators:						
1 h.p. or kw. to 5 h.p. or kw.	82	261	64	345	1,162	116
6 h.p. or kw. to 25 h.p. or kw.	288	2,670	189	149	2,438	361
26 h.p. or kw. to 100 h.p. or kw.	343	19,549	1,125	283	16,207	1,260
101 h.p. or kw. to 200 h.p. or kw.	69	10,940	470	54	8,740	327
201 h.p. or kw. to 1000 h.p. or kw.	—	—	2	66	28,461	1,094
1001 h.p. or kw. and over.....	—	—	—	—	—	—
Accessories and parts for d.c. motors and generators.....	—	—	917	—	—	2,023
All other motors or generators¹	—	—	6,685	—	—	7,750
Totals	...	...	44,390	...	...	54,039

See footnotes at end of table.

C. Transformers, by Types, 1962 and 1963

[illegible]

TABLE 8. Shipments of Selected Goods of Own Manufacture - All Industries - Continued
C. Transformers, by Types, 1962 and 1963 - Concluded

Type	1962			1963		
	Number	Total rating	Value	Number	Total rating	Value
		kva.	\$'000		kva.	\$'000
Metering outfits (combination of current and potential transformers in one enclosure):						
Up to and including 15 kv.	597	..	470	526	..	527
Above 15 kv.						
Luminous tube transformers .....	..	..	1,857	..	..	2,009
Ignition transformers (oil and gas)						
Radio and TV transformers:						
Air core	1,494,708	..	1,462	1,735,617	..	1,191
Powdered iron and ferrite core						
Laminated core						
Transformers for electronic equipment (other than radio and TV)	383,272	..	1,978	280,920	..	1,830
Fluorescent transformers and ballasts	2,285,061	..	10,270	2,026,263	..	11,899
Mercury lamp transformers	61,367	..	1,777	64,805	..	2,153
Bell ringing and chime transformers	—	—	4	—	—	4
Control and signalling transformers	60,511	..	481	63,793	..	529
General purpose dry type transformers, up to and including 2 kva.	—	—	4	—	—	4
All other transformers .....	..	..	4,846	..	..	5,466
Parts and supplies for transformers .....	..	..	1,198	..	..	1,591
Totals .....	...	...	69,989	...	...	83,836

D. Electrical Switch Gear and Protective Equipment (Except Telephone Switchboards), 1962 and 1963

Item	Value	
	1962	1963
	\$'000	
Switchgear assemblies:		
Metalclad switchgear, 5 kv. and 15 kv. with drawout oil circuit breakers	2,008	1,468
Metalclad switchgear, 5 kv. and 15 kv. with drawout oilless circuit breakers (includes air and airblast breakers)	7,348	9,301
600 volt metal-enclosed switchgear (drawout or fixed breakers, but not including moulded case breakers)	4,775	4,700
Control desks, duplex and open switchboards and supervisory control	1,987	2,890
Metal-enclosed fusegear assemblies (above 600 volts)	4,232	4,337
Power circuit breakers (sold apart from assemblies and not including sectionalizers or reclosers):		
Indoor oil or oilless circuit breakers	4,692	5,189
Outdoor oil circuit breakers		
Outdoor oilless circuit breakers		
Low voltage air circuit breakers (sold apart from assemblies but not including moulded case breakers)	1,034	742
Disconnecting switches:		
Indoor type	759	753
Outdoor type	3,012	3,587
Lightning arresters:		
15 kv. and under	854	938
Over 15 kv.		
Power capacitors:		
Units (sold apart from assemblies)	s	1,068
Assemblies (including units)		
Low voltage switchboards (fused or circuit breaker types)	2,257	3,195
Distribution, lighting and residential panelboards (with fuses or moulded case circuit breakers)	13,373	12,882
Industrial and residential enclosed safety switches and circuit breakers	4,776	5,025
Miscellaneous cabinets, wireways, gutters, surface raceways (excluding conduit and metallic tubing) and bus ducts including feeder, plug and trolley types	3,594	3,710
Oil circuit reclosers and sectionalizers, up to and including 15,000 volts and repair parts	s	s
Relays, switchgear type, protective, auxiliary, regulation, etc. (sold apart from switchgear assemblies)	1,364	1,463
Potheads	s	s
Other switchgear and protective equipment	6,241	5,473
Totals	62,306	66,721

See footnotes at end of table.

TABLE 8. Shipments of Selected Goods of Own Manufacture - All Industries - Continued

E. Electric Welding Apparatus and Welding Rod, 1954-63

Year	Welding apparatus		Welding rod ⁶	
	Electric arc welding equipment with controls	Other electric welding apparatus ⁷	Quantity	Value
	\$'000	\$'000	tons	\$'000
1954	1,213	1,530	11,926	3,634
1955	1,546	1,837	15,100	4,800
1956	2,324	3,215	20,230	6,823
1957	2,426	1,738	20,199	7,675
1958	1,816	1,176	18,474	7,436
1959	1,975	2,300	21,777	8,459
1960	2,175	1,650	19,490	7,342
1961	1,861	2,068	21,236	9,053
1962	2,242	2,094	26,039	11,073
1963	3,192	2,368	25,620	12,230

F. Industrial Control Equipment, 1962 and 1963

Item	Value	
	1962	1963
	\$'000	
A.C. single phase and d.c. full voltage fractional horsepower low voltage manual starting switches including horsepower rated snap switches 1 h.p., 250 v. max.	541	546
A.C. and d.c. full voltage single phase and 3 phase integral horsepower manual low voltage starters 7½ h.p., 600 v. max.	667	687
A.C. full voltage single speed and multispeed low voltage magnetic line starters size 0 and up, for squirrel cage motors, 600 v. max. (ampere rated starters for hermetic motors not included)	4,092	4,546
A.C. low voltage magnetic contactors size 0 and up, and a.c. or d.c. magnetic multipole relays including single-voltage, double-voltage and timing relays and thermal and magnetic relays intended for starting and running protection of motors, 500 v. max. (thermal overload relay heaters furnished separately not included)	2,025	2,410
A.C. reduced voltage manual low voltage starters for squirrel cage motors, 600 v. max. (synchronous and wound-rotor motor controllers not included)	250	534
A.C. reduced voltage magnetic low voltage starters for squirrel cage motors, auto-transformer, resistor, reactor, part-winding and wye-delta types, 600 v. max. (synchronous, hermetic and wound-rotor motor controllers not included)	443	476
A.C. full voltage and reduced voltage ampere-rated low voltage controllers for hermetic motors, 600 v. max.	141	143
A.C. motor control centres consisting of factory assembled groups of low voltage combination magnetic starters, 600 v. max. (self-standing starter racks and assemblies not included)	4,554	5,154
A.C. high voltage class E-1 and E-2 induction and synchronous motor controllers, 5,000 v. max. incorporating short circuit current interrupting means higher than 10 times contactor ampere rating	1,462	1,554
A.C. low-voltage and unfused high voltage synchronous motor controllers and field panels	107	75
A.C. combined motor drives including mine hoist and paper-machine drives and liquid rheostats (packaged adjustable voltage drives not included)	325	373
All other a.c. motor control equipment including a.c. machine tool control and general purpose panels, wall, floor or machine mounted, consisting of grouped general purpose components, devices and starters; racked group control; a.c. magnetic crane and traffic bridge control and a.c. crane protective panels; a.c. magnetic low voltage and unfused high voltage wound-rotor motor control including magnetic secondary panels; a.c. high voltage contactors; low voltage firepump control; static adjustable voltage drives having static power conversion components; all other a.c. magnetic control n.o.p. all push button and indicating light stations larger than ordinarily listed by manufacturers. (Packaged adjustable voltage drives with rotating amplifiers and/or rotating converters, mine hoist drives and motor control centres not included)	2,385	2,566
D.C. low voltage magnetic contactors, controllers, starters and time starters including d.c. magnetic machine tool control, d.c. magnetic crane and traffic bridge control, d.c. crane protective panels, d.c. mill auxiliaries, and all other d.c. magnetic control n.o.p. (mine hoist drives not included)	544	698
D.C. mine and mill combined drives including steelmill, paper machine and rubber-mill drives, and static electronic and semiconductor rectifier drives (d.c. mill auxiliaries not included)		
A.C. and d.c. drum and cam switches and controllers, dial starters and rheostats and motor starting and speed controlling resistors mounted separately	461	429
Brakes with a.c. coils or d.c. coils, their clutches and actuators	242	126
Pushbutton and indicating light stations up to maximum grouping ordinarily listed by manufacturers, and pushbutton and indicating light components (not including pushbutton and indicating light stations)	1,494	1,693
Limit switches and all other pilot control equipment including pressure, vacuum, temperature, and liquid-level switches, plugging switches, speed switches, solenoids and terminal blocks. (Linestarter modification kits, pilot devices used in appliances, air-conditioning, refrigeration, heating and domestic installations not included)	1,025	1,218
Resistance welding and electronic control equipment including electronic and static control assemblies, electronic and static magnetic amplifiers, electronic relays, photoelectric controllers, voltage, speed, followup, position, inspection and gauging apparatus and solid-state control devices. (Packaged static adjustable voltage drives not included)	1,319	1,322
Renewal parts for industrial control equipment including modification, accessory and repair kits and separately furnished overload relay heaters	1,912	2,559
All other industrial control equipment	4,879	5,229
Totals	28,868	32,338

See footnotes at end of table.

TABLE 8. Shipments of Selected Goods of Own Manufacture - All Industries - Continued
G. Cutouts and Fuses, 1962 and 1963

Item	Value	
	1962	1963
	\$'000	
Cutouts and fuses:		
Open, semi-enclosed and enclosed distribution cutouts (601 volts and above), indoor and outdoor fused disconnect switches including porcelain housed, removable switch blades for use therewith (do not include fuse links therefor) and repair parts	1,462	1,683
Fuse links for distribution cutouts	332	345
Oil fuse cutouts including fuse links therefor and repair parts	9	9
Power fuses (solid material type) - Up to and including 600 volts	486	629
Power fuses 601 volts and above (solid material and current limiting types), fuse supports, fuse mountings and repair parts		
Fuse links for power fuses 601 volts and above (solid material and current limiting types)	9	9
Cartridge fuses	2,093	1,436
Plug fuses		
Individual cutouts for cartridge and plug fuses	9	9
All other fuses	541	1,668
Renewal elements for cartridge fuses	9	9
Totals	4,914	5,761

H. Converter Equipment, 1962 and 1963

Type	1962			1963		
	Number	Total rating	Value	Number	Total rating	Value
		kv.	\$'000		kv.	\$'000
Motor-generator sets up to and including 150 kw. - Induction and synchronous types (including frequency changers)	2,836	10,235	990	124	5,783	519
Motor-generator sets larger than 150 kw. - Induction and synchronous types (including frequency changers)	50	58,295	3,401	27	27,984	1,271
Mercury arc power rectifier and excitation cubicles (does not include associated switchgear or transformers) .....	..	..	2,965	..	..	1,567
Semi-conductor power rectifier equipment including plate and crystal junction types (does not include associated switchgear, transformers or commercial battery chargers):						
5 kw. to 50 kw.						
Over 50 kw. ....	...	...	399	...	...	276
Parts and supplies for converter equipment	-	-	7,755	-	-	3,633
Totals of above items	-	-	2,062	-	-	2,147
Rectifiers for storage battery charging (semi-conductor and/or electron tube type)	-	-		-	-	

I. Watt-hour Meters, 1954 - 63

Year	Quantity	Value	Year	Quantity	Value
	No.	\$'000		No.	\$'000
1954	434,169	7,368	1959	410,943	7,493
1955	471,354	7,053	1960	315,992	5,978
1956	534,742	8,019	1961	364,089	6,292
1957	469,188	7,951	1962	340,752	5,991
1958	399,935	6,915	1963	392,065	6,325

See footnote at end of table.

TABLE 8. Shipments of Selected Goods of Own Manufacture - All Industries - Concluded

J. Pole Line Hardware, 1954-63

Year	Value	Year	Value
	\$'000		\$'000
1954	8,065	1959	12,251
1955	9,130	1960	11,146
1956	11,888	1961	10,617
1957	11,988	1962	11,962
1958	12,303	1963	12,642

- ¹ Electric motors and/or generators as indicated.
² Included with "All other motors or generators".
³ Includes rotors and stators.
⁴ Included in "All other transformers".
⁵ Included with "Other".
⁶ Includes both gas and electric welding rod of ferrous type only.
⁷ Includes "Resistance welding equipment with controls".
⁸ Included with "All other industrial control equipment".
⁹ Included in "All other fuses".

List of Establishments classified to This Industry, 1963

(Does not include establishments classified to other industries, which as a secondary activity, manufacture products typical of this industry)

Name	Location
Quebec:	
Brown Boveri (Canada) Ltd.	4000 New Metropolitan Blvd., Pointe Claire
Canada Iron Foundries Ltd.	Lachine
Canadian General Electric Co. Ltd.	1130 Blvd. Charest West., Quebec
Crompton Parkinson Electrical Ltd.	4104 St. Catherine St. W., Westmount, Montreal
Electrical Mfg. Co. Ltd.	Montmagny
Electrical Switchgear Ltd.	115 St. Denis St., St. Lambert
Federal Pacific Electric of Canada	Granby
Ferranti-Packard Electric Ltd.	Three Rivers
J. & R. Electric Co.	2520 Charland St., Montreal 12
Klockner-Moeller Canada Ltd.	Granby
Mackay Automation and Controls Ltd.	8574-10th Ave., Ville St. Michel
Marcus Transformers of Canada Ltd.	999 College St., Montreal 30
Presteel Ltd.	10601 Georges Pichet, Montreal North
Reliance Electric & Engineering (Canada) Ltd., (Les Transformateurs de Québec Div.)	280 St-Dominique St., Quebec
Sacrete Industrielle d'appareillage Technique Inc.	Lauzon
Sangamo Co. Ltd.	Three Rivers
Ontario:	
Acme Electric Corp. Ltd.	50 Northline Rd., Toronto 16
Al-Ma Equipment Co. Ltd.	430 Comstock Rd., Scarborough
Allanson Manufacturing Corp. Ltd.	33 Cranfield Rd., Toronto 16
Allen-Bradley Canada Ltd.	Galt
Ascot of Canada Ltd.	59 Howden Rd., Scarborough
Bach-Simpson Ltd.	1255 Brydges St., London
Berlet Electronics & Controls Ltd.	Galt
Brevet Products Ltd.	45 Crookford Blvd., Scarborough
Bogue Electric of Canada Ltd.	Box 900, Station "B", Ottawa
Canadian Controllers Ltd.	Birchmount Rd., Scarborough
Canadian General Electric Co. Ltd.	Guelph
Canadian General Electric Co. Ltd.	940 Lansdowne Ave., Toronto 4
Canadian General Electric Co. Ltd.	Peterborough
Canadian Sterling Electric Ltd.	799 Rennie St., Hamilton
Canadian Westinghouse Co. Ltd.	286 Sanford Ave. N., Hamilton
Canadian Westinghouse Co. Ltd.	Clarke Sideroad & Huron St., London
Canadian Westinghouse Co. Ltd.	1475 The Queensway, Toronto 18
Cansfield Electrical Works Ltd.	260 Geary St., Toronto 4
Clare Canada Ltd., C.P.	840 Caledonia Rd., Toronto
Clark Coil Company	938 Walker Rd., Windsor
Controls Company Canada Limited	St. Thomas
Crompton Parkinson Electrical Ltd.	Cainsville
Cutler-Hammer Can. Ltd.	45 Progress Rd., Scarborough
Dominion Cutout Ltd.	250 Richmond St. W., Toronto 2B
Dresser Electric Ltd.	877 Walker Rd., Windsor
Electric Control & Engineering Co. Ltd.	1199 Finch Ave. West, Downsview
Electronic Controls Ltd.	11 Water St., Belleville
Fanner Electrical Products Ltd. The	50 Frio St., Hamilton
Ferranti-Packard Electric Ltd.	13 Race St., St. Catharines
Ferranti-Packard Electric Ltd.	Industry St., Toronto 15
F.H. Welding Machines Ltd.	92 North Queen St., Toronto 18
Industrial & Machine Control Co.	1720 Langlois Ave., Windsor
Industrial Transformer Co. Ltd.	767 Warden Ave., Scarborough
Insul-Corp. (Canada) Ltd.	Eglinton & Pharmacy, Toronto
I.T.E. Circuit Breaker (Canada) Ltd.	24 Ronson Dr., Rexdale
Johnston Soper Ltd.	Port Credit
Jones & Moore Electric Co. Ltd.	230 Weber St. N., Waterloo
Kearney Corp. of Canada Ltd., James R.	296 Adelaide St. W., Toronto 2B
Klockner-Moeller Canada Ltd.	Guelph
	19 Hass Rd., Rexdale

List of Establishments classified to This Industry, 1963 - Concluded

Name	Location
Ontario - Concluded:	
Leece Neville of Canada Ltd.	359 Frankcom St., Ajax
Lincoln Electric Co. of Canada Ltd.	179 Wicksteed Ave., Leaside
Line & Cable Accessories Ltd.	Newmarket
Link Welder of Canada Ltd.	2930 College Ave., Windsor
Lovatt Engineering Ltd.	Chesley
Marquette Equipment (Canada) Ltd.	Rexdale Blvd., Rexdale
Mechron Engineering Products Ltd.	2437 Kaladar Ave., Ottawa
McGraw-Edison (Canada) Ltd.	3595 St. Clair Ave. East, Scarborough
Moloney Electric Co. of Canada Ltd.	213 Sterling Rd., Toronto 3
Murray-Jensen Mfg. Ltd.	216 Norseman St., Toronto 18
Nichols Co. Limited, R.H.	Box 500, Downsview
Osborne Electric Company Ltd.	95 Wesley St., Toronto 18
Penzer Products Ltd.	72 Vine St., St. Catharines
Pioneer Electric Eastern Ltd.	2 Audley St., Toronto 18
Powertronic Equipment Ltd.	50 Bermondsey Rd., Toronto
Precision Welder & Flexopress (Canada) Ltd.	72 Carnforth Rd., Toronto
Progressive Welder (Canada) Ltd.	Chatham
Reliance Electric & Engineering (Canada) Ltd.	Welland
Reliance-Reeves-Master Ltd.	Stratford
Robbins & Myers Co. of Canada Ltd., The	Brantford
Robotron of Canada Ltd.	Sandwich
Sangamo Co., Ltd.	215 Laird Dr., Leaside
Sangamo Co. Ltd.	Guelph
S. & C. Electric Canada Ltd.	90 Belfield Rd., Rexdale
Sherley Controls Ltd.	30 Fifth Ave., Ottawa 1
Shoe Machine Parts Ltd.	60 Tecumseh St., Toronto
Slater Co. Ltd., N.	681 King St. W., Hamilton
Sola-Basic Products Ltd.	377 Evans Ave., Toronto 18
Square D. Company Canada Ltd.	Mount Dennis
Stegg Electric Ltd.	34 Bertram Blvd., Belleville
Syntron (Canada) Ltd.	Stoney Creek
T. & H. Controls Limited	Chatham
Trench Electric Ltd.	100 Niagara St., Toronto 2 B
Trigon Associates Ltd.	32 B.C.D. Howden Rd., Scarborough
Volta Welders Ltd.	673 Wellington Ave., Windsor
Vulcan Electric Products Limited	3160 Dundas St., West, Toronto
Ward Leonard of Canada Ltd.	1070 Birchmount Rd., Scarborough
Weld-O-Matic Machines Ltd.	610 Beach Rd., Hamilton
Weltronic Co. - Canadian Division	3201 Marentette Ave., Windsor
Western Controls Ltd.	43 St. Point Rd., Toronto 18
Manitoba:	
Pioneer Electric Limited	101 Rockman St., Winnipeg 19
Pioneer Electric Brandon Ltd.	11th Street & Richmond Ave., Brandon
Saskatchewan:	
Pioneer Electric (Sask) Limited	1600 First Ave., Regina
Smith-Roles Ltd.	34th St. & Alberta Ave., Saskatoon
Alberta:	
Lefebvre Eng. Ltd., Y.H.	514 A-5th Ave., St. W., Calgary
Nemco Electric Mfg. Ltd.	344-39th Ave., S.E., Calgary
Petro-Automation Industries Ltd.	3818-7th St., S.E., Calgary
Pioneer Electric (Alberta) Ltd.	Red Deer
British Columbia:	
British Columbia Transformer Co. Ltd.	4336 Lougheed Hwy., North Burnaby
Canadian Westinghouse Co. Ltd.	281 Industrial Ave., Vancouver
Federal Pacific Electric of Can.	22 E., 5th Ave., Vancouver
I.T.E. Circuit Breaker (Can.) Ltd.	8650 Barnard St., Vancouver 14
Klockner-Moeller Canada Ltd.	1350 East 4th Ave., Vancouver 12
Research Industries Ltd.	2971 Lake City Way, Burnaby 2
Transco Mfg. Ltd.	1430 River Rd., RR 2, Richmond
Vancouver Electric Boxes Ltd.	176 Salsbury Dr., Vancouver 6

CONCEPTS AND DEFINITIONS

Census of Manufactures

General

The Census of Manufactures is an annual mail survey covering Canada's Manufacturing Industries. It is based on the Standard Classification of Industries and full details concerning the system may be found in the Standard Industrial Classification manual, Catalogue No. 12-501 which is available from the Queen's Printer or the Dominion Bureau of Statistics. In summary, the Classification as it relates to the manufacturing industries provides for a breakdown into 140 industries arranged in 20 major industry groups. Of the 140 (3 digit) industries, 18 are further broken down into 58 (4 digit) sub classes. At the Canada level, principal statistics are collected and compiled for 178 separate industries. They cannot all be published separately by province, however, because of the confidential nature of the data in certain provinces.

The reporting unit for the Census is designated as the **establishment** (see definition of "Establishment" in following section) and a return is requested from every establishment classified to a manufacturing industry. Although respondents are required to submit reports covering the calendar year, financial year reports other than the calendar year are accepted in instances where respondents find it impossible to supply calendar year data from accounting records. When an establishment is operated for only part of a year a report is required covering the period of operation.

There are four different questionnaires used in the Census of Manufactures; (a) short form (b) long form (c) head office questionnaire and (d) commodity questionnaire. The short and long forms are used to obtain principal statistics and commodities shipped from establishments classified to manufacturing industries and differ only in the amount of detail requested. The short form is a single-sheet questionnaire sent to small manufacturers generally reporting shipments of less than \$100,000; this cut-off, however, varies somewhat between industries. The head office questionnaire is generally used for company head offices and/or auxiliary units separately located from the manufacturing establishment(s), (see following notes on Head offices and auxiliary units). The Commodity questionnaire is used to survey certain establishments which are coded (on the basis of their principal activity) to industries other than manufacturing in the Standard Industrial Classification system, but which undertake some manufacturing as a subsidiary activity. This single-sheet questionnaire is designed to collect information on the quantity and value of goods of own manufacture shipped by such establishments in order to achieve full coverage of domestically manufactured commodities (see the following note under Shipments).

The results of the Census are presented in some 140 publications. In addition to these annual industry publications there are annual summary reports for Canada and the provinces and special reports giving principal statistics by detailed geographic areas, by type of ownership and size of establishment. A special annual report covering the shipments of all manufactured commodities arranged in alphabetical order is also published.

Since 1960 the following major changes have been implemented in the Census of Manufactures: (a) a revised Standard Industrial Classification (b) a new establishment definition and (c) an extension of the establishment definition to cover the non-manufacturing activities of manufacturing establishments. The statistics presented in the various 1963 reports reflect the complete implementation of these changes and enable comparisons to be made with the years 1961 and 1962. For a complete description of the procedures followed in establishing the revised series, reference should be made to the Explanatory Notes included in the 1960, 1961 and 1962 industry publications. The statistical framework within which the Census of Manufactures is now carried out is based on the following concepts and definitions which have been developed as part of a general programme to achieve a fully integrated system of economic statistics.

Establishment

A manufacturing establishment is typically a factory, mill or plant principally engaged in manufacturing activities. The majority of such establishments are firms but many firms have more than one establishment. Such firms are requested to submit a separate Census of Manufactures report for each manufacturing establishment which can meet the reporting requirements embodied in the following definition of the "establishment":

"The smallest unit which is a separate operating entity capable of reporting the following principal statistics:

- Materials and supplies used
- Goods purchased for resale as such
- Fuel and power consumed
- Number of employees and salaries and wages
- Man-hours worked and paid
- Inventories
- Shipments or sales."

Each establishment is required to report on all the activities carried out within its accounting boundaries (except income from investments such as rent, interest and dividends) and data on the different activities (manufacturing, trading in goods not of own manufacture, construction by own labour

force, revenue from services, etc.) are requested to be reported separately. It should be noted that the statistics for separate activities are not completely consistent since some respondents cannot distinguish, in their records, materials, shipments and inventories relating solely to their own manufacturing activities. For example, inventory of goods purchased for re-sale may not be distinguishable from inventory of own manufactured goods. Complete consistency, therefore, can be obtained only at the "all operations" (total activity) level and for studies or statistical measures requiring accurate coordinated data, the "total" statistics should be used.

The number of establishments represents the number of operating units that are principally engaged in the activities of the manufacturing industries to which they have been classified. These units do not necessarily represent the total number engaged in the production of a commodity mainly produced in a certain industry. Some commodities are produced as secondary products in other manufacturing and non-manufacturing industries. It should be noted that head offices and auxiliary units which are surveyed separately are not included in the establishment count, (see following notes on head offices and auxiliary units).

Head Offices and Auxiliary Units

All head offices and auxiliary units of companies classified to the manufacturing industries such as sales offices, administrative offices, warehouses, laboratories, etc. are now surveyed as part of the Census of Manufactures.

These head offices and auxiliary units are either included in an establishment report or are surveyed by means of the head office questionnaire. The former is the most common case where a single establishment firm has its executive personnel, sales office, etc. located at the site of the manufacturing plant (establishment). The special head office questionnaire is generally used where a firm, regardless of the number of establishments, has separately located offices or auxiliary units. Such offices or units do not constitute establishments within the Census of Manufactures as they do not normally generate operational revenues, but give rise only to costs of operations (mainly salaries and wages) which are automatically included in the value of shipments or sales. Although not considered as establishments, and hence, not included in the "establishment" count for an industry, the operational costs are reflected in either the "Industry" statistics (3 or 4 digit level) or the "Major group" statistics (2 digit level) according to the following rules:

(a) In the case of single establishment firms, statistics for separately located offices and units are classified to the same industry (3 or 4 digit) as the establishment;

(b) In the case of multi-establishment firms, the statistics for such offices and units are coded to the same industry as the establishments of the

firm, when all establishments are in the same industry (3 or 4 digit). When establishments of such firms are coded (1) to different industries within a major group, (2) to industries in different major groups or (3) to industries in different divisions of the Standard Industrial Classification, then the statistics are included in the major group totals (2 digit level) in which the major part of the company's operations are classified. Although this may result in some distortion of major group statistics in the case of (2) and (3) the statistics at the industry (3 or 4 digit) level in all cases will be left free of these company-wide data.

Employees

(a) Production and related workers — Manufacturing activity

In addition to those engaged in production and assembling activities, they include those employed in storing, inspecting, handling, packing, warehousing, etc. They also include employees engaged in maintenance, repair, janitorial and watchman services and line supervisors (working foremen) engaged in similar work to that of the employees they supervise. Production and related workers engaged in manufacturing activity are reported as those receiving pay during the last pay period of each month, an average for the year being obtained by summing the monthly figures and dividing by 12. This procedure is followed even though the establishment did not operate in all months in order to arrive at equivalent annual full-time employment. The numbers are somewhat affected by turnover, in that employment is overstated when an employee changes employment during a pay period. The man-hours of production and related workers in manufacturing activity represent total man-hours paid (total hours at work during the calendar year plus hours not worked but nevertheless paid for, such as paid vacations, sick leave, statutory holidays, etc.). In reporting overtime hours, respondents are requested to report only hours actually at work. It should be noted that the division of hours paid into production and related workers payrolls results in average hourly earnings and does not represent hourly wage rates which are collected and published by the Department of Labour and which are based on selected occupations.

(b) Production and related workers — Non-manufacturing activities

Such employees include those on manufacturing establishments' payrolls engaged in activities such as construction undertaken for the use of these establishments, some outside piece-workers employed in certain industries, logging employees who are reported as part of a sawmilling establishment and any other production workers who are not engaged in manufacturing-type operations.

(c) Administrative and office employees

This category includes all executive and supervisory officials such as presidents, vice-presidents, comptrollers, secretaries, treasurers,

etc., together with managers, professional, technical and research employees, superintendents and factory supervisors above the line supervisor or working foreman level, and clerical staffs. Also included are employees in activities such as advertising, credit collections, purchasing, personnel, legal, medical, etc. It should be noted that prior to 1961 this category also included working owners and partners. Also included in this category are employees located at head offices or auxiliary units separately located from the establishment; these are generally included in the figures for the province in which they are located according to the rules outlined under "Head offices and auxiliary units" above.

(d) Sales and distribution workers

This category includes office personnel whose salaries are charged to selling expense, travelling salesmen, driver salesmen, truckdrivers and their helpers, etc. It may also include some sales employees who are reported as part of a manufacturing establishment but are not working at the establishment's location. These are generally broken down by province in cases where more than 15 employees are involved in any one province. The figures exclude persons working on a commission basis who are not considered regular employees of the establishment.

(e) Total Employees

This total comprises the foregoing categories including employees located at separately located head offices and auxiliary units. The numbers of employees included under categories (b), (c) and (d) are reported in the form of annual averages and represent as closely as possible full time employment; adjustments are made when reported figures indicate the existence of part time or seasonal employment. In all the above categories, figures on employment refer to the calendar year whether or not other establishment statistics can only be reported on a fiscal year other than the calendar year.

Working Owners or Partners

These are not now included in the statistics of employees and salaries and wages. There is some duplication in numbers when a person owns more than one establishment and is reported as a working owner on each Census return. Withdrawals of working owners defined as amounts withdrawn by owners or partners for normal living expenses excluding withdrawals for payment of income tax.

Salaries and Wages

Salaries and wages refer to gross earnings of employees **before** deductions for income tax and employees contributions to social services such as sickness, accident and unemployment insurance, pensions, etc. They include all salaries, wages, bonuses, profits shared with employees, the value of room and board where provided, commissions (paid to regular employees only) as well as any

other allowance forming part of the worker's earnings. Payments for over-time are included. Figures on salaries and wages refer to the calendar year.

Fuel and Electricity

Figures for fuel refer to amounts actually used (including fuel used in cars, trucks, locomotives, etc.), not to purchases unless the quantities are substantially the same. **Any fuel and electricity produced by establishments for internal consumption are not included in the total cost.** Values represent laid down cost at the establishment including freight, duty, etc. Although fuel and electricity used is considered part of manufacturing activity it should be noted that it also includes relatively small amounts used in non-manufacturing activities since these cannot be reported separately.

Materials and Supplies

(a) Manufacturing activities

Figures represent quantities and laid down cost values, at the establishment, of materials, supplies and purchased components owned and used during the year in manufacturing activities and related processes. These statistics represent only commodity items or physical goods (cost of services or overhead charges such as advertising, insurance, depreciation, etc. are not included) whether purchased from others or received as transfers (in the form of materials, components or semi-processed goods) from other establishments of the reporting company. Included are maintenance and repair supplies not chargeable to fixed assets accounts and any amounts charged by other establishments for work done on materials owned by the reporting establishment. Cost of repairs or maintenance done by outside contractors and cost of returnable containers are not included.

(b) Non-manufacturing activities

1. Purchases for re-sale as such

Figures represent cost of materials or products purchased from others by the reporting establishment (or received as transfers from other establishments of the reporting company) for re-sale as such in the same condition as purchased. Included are any finished products received on consignment from other countries.

2. Other materials and supplies used

Figures represent the cost of materials and supplies, if any, used in new construction and in the production of machinery and equipment (for the use of the reporting establishment) by the establishment's own employees. Included are materials used for any capital repairs and alterations carried out by the establishment's employees. Amounts paid to outside contractors for construction and repair work are not included nor is the cost of purchased machinery and equipment. Also included is the cost of office supplies not chargeable to

fixed assets accounts and the cost of such other items of materials and supplies used as food, beverages and supplies for establishment-operated cafeterias and lunch counters, first aid and medical supplies, laboratory supplies, etc.

Shipments

(a) General

The figures represent revenue from all production, sales, services and related activities of reporting establishments with shipments valued in Canadian dollars at the point at which the establishment relinquishes control. The unsold portion at year end of consignment shipments in Canada is treated as inventory and not as shipments but all shipments to foreign countries for which the form B13 "Customs Canada Export Entry" has been completed, are treated as shipments.

In those industries where work on principal products extends over a relatively long period, (Fabricated Structural Metal Industry, Aircraft and Parts Manufacturers, Railroad Rolling Stock Industry and Shipbuilding and Repair Industry) the value of production rather than the value of shipments is recorded. There are certain establishments in other industries which also operate on a basis of progress payments. For these establishments, shipments are also adjusted to work put in place on the basis of the net change in progress payments over the year.

(b) Shipments of goods of own manufacture

These figures represent shipments of goods made from own materials either in the reporting establishments or by other manufacturers on the basis of a charge to the reporting establishments for work done. Included are revenue from repair and custom work, amounts received in payment for work done on materials owned by other establishments and the cost (book value) of any goods shipped on a rental basis.

All products and by-products of own manufacture shipped from the establishment are covered, including transfer shipments to sales outlets, distributing warehouses or to other manufacturing plants of the reporting firm, when such units are treated as separate establishments. The value of shipments are net of returned goods, discounts, returns, allowances, sales tax and excise taxes and duties, returnable containers and charges for outward transportation by common or contract carriers. Transportation or delivery expense incurred by the reporting establishment's own carriers are included.

Shipments of goods of own manufacture of establishments which are coded to some other division of the Standard Industrial Classification (on the basis of principal activity) but which are engaged in manufacturing as a subsidiary activity are collected by means of the Commodity questionnaire referred to earlier. Such shipments together

with shipments of goods of own manufacture of establishments forming the universe of manufacturing industries are compiled and recorded in the various industry publications.

(c) Shipments of goods not of own manufacture

These figures represent the net selling value at establishment (net of discounts, returns, allowances, sales taxes and excise duties and taxes and transportation charges by common or contract carriers) of all products or materials (including products transferred from other establishments of the reporting firm) sold as such in the same condition as purchased or received as transfers. For those industries which ship such goods on a rental basis, the value of shipments represents the book value of these goods. All sales of consignment goods from other countries are included.

(d) Other revenue

Figures represent the book value of fixed assets, if any, (new construction and machinery and equipment including major repairs, alterations, additions, modifications, installation and assembly work) produced during the year for the use of reporting establishments by the establishment's own employees and for which depreciation accounts are maintained. Included also are any revenues from the sale of electricity and from any operations performed by the establishment's own employees, such as revenue from goods produced or purchased for rental (the book value of such goods are included as part of shipments of goods of own manufacture or shipments of goods not of own manufacture), servicing revenues, commissions on sales (when not included in value of sales), revenue for company-operated cafeterias and lunch counters and revenue from outside installation or construction work not related to the establishment's own products, sale of used materials (excluding sale of used fixed assets) research and development work, etc. As mentioned previously the figures do not include non-operating revenue such as rent, dividends, interest, etc.

Inventories

(a) Manufacturing activities

Values represent the book values of manufacturing inventory owned in Canada. Inventories held for which progress payments have been received are not included. Where progress payment accounts are maintained, the change in these accounts is treated as a net adjustment to shipments. Figures consist of inventory owned at the plant and at warehouses or selling outlets which are treated as extensions of establishments for the purpose of reporting shipments. Inventory owned in transit in Canada or on consignment in Canada is included. Goods shipped abroad and held in inventory are included in shipments. Opening inventories may differ from the closing inventories of the previous year because of changes in classification, the

receipt of revised data, the inclusion of new establishments and the removal of establishments which did not operate during the survey year.

(b) Non-manufacturing activities

Figures represent the book value of inventory of goods purchased for re-sale as such without further processing, owned by the reporting establishments and held at plants and at any warehouses or selling outlets which are treated as extensions of establishments. Other characteristics are the same as in (a) above.

Value Added

(a) By manufacturing activities

Figures are compiled by deducting the cost of materials and fuel and electricity consumed from the value of production (value of shipments adjusted for changes in the value of inventories of finished goods and goods in process).

(b) By non-manufacturing activities

The figures are compiled by deducting the cost of goods purchased for re-sale (adjusted for changes in the value of inventories of goods

purchased for re-sale) and the cost of other materials and supplies used from the value of shipments of goods not of own manufacture, plus other revenue.

(c) By Total activities

The figures consist of value added by manufacturing activities plus value added by non-manufacturing activities. This total value added figure may, in some cases, be less than value added by manufacturing activities as a result of expenditures associated with non-manufacturing exceeding revenues from such activities or because of a decrease in inventory of goods not of own manufacture exceeding the mark-up on the sale of such goods. "Value added" is sometimes referred to as net production. However, to arrive at the National Accounts concept of net production, or Gross Domestic Product at "Factor cost" it would be necessary to subtract also the cost of advertising, insurance and other business expenses which are not collected as part of the annual Census of Manufactures. "Value added" figures for the primary industries, manufacturing and construction are published in DBS publication Catalogue No. 61-202, "Survey of Production".

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