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USE OF ELECTRIC POWER
IN
MANUFACTURING AND MINING INDUSTRIES
IN
CANADA



OTTAWA
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OTTAWA

Dominion Statistician. S. A. CUDMORE, M.A. (Oxon.), F.S.S., F.R.S.C.

Chief, Transportation and Public Utilities Branch, G.S. Wrong, B.Sc.

USE OF ELECTRIC POWER
IN
MANUFACTURING AND MINING INDUSTRIES
IN CANADA
1940

This report, issued during the past eleven years, has attempted to show the evolution of power machinery in manufacturing and mining industries in Canada toward electric drive and particularly toward electric motors driven by power generated in central stations. With no coal mined in the chief manufacturing provinces of Ontario and Quebec and with a large supply of water power within economic transmission distances of manufacturing and mining centres in these and in most of the other provinces, this trend has been more pronounced than in many countries. The trend has been measured by the ratio of electric motor capacity to total power equipment installed in these industries, the central electric station industry being excluded as one of the manufacturing industries.

This ratio of electric motor rating to total power equipment indicates this evolution, but the movement towards electric drive is slightly exaggerated because of the practice in mills, factories, etc., of installing motors at each machine or group of machines with a total capacity greater than would be necessary if only one large motor were used or if a steam engine and belts and shafting were used. Also there are some industries which require steam in their manufacturing processes, and consequently use steam engines as their primary power equipment. Some of these are a hundred per cent electrified and some are not. Other industries use direct hydraulic drive such as ground wood pulp mills. In such industries it is probable that electric motors will never supplant other forms of power equipment. In the early annual industrial censuses no segregation was made of electric motors operated on power purchased from central electric stations and on power produced within the establishment making the report. Consequently, 1925 is the first year for which total power employed can be compiled without duplication.

During the seventeen years from 1923 to 1940 the increase in the total capacity of power equipment in manufacturing and mining industries has been 3,904,556 h.p., or 159.5 p.c. Of this total increase electric motors operated on central electric station power accounted for 3,232,298 h.p., or 83 p.c. Steam engines increased by 302,671 h.p., and internal combustion engines by 200,180 h.p. This latter increase was 372.5 p.c., there being only 53,743 h.p. installed in 1923. These engines include both gasoline or electric ignition engines and diesel or compression ignition engines, and many of these are used to drive electric generators. The electric motors driven by power generated in the industries increased in capacity from 410,996 h.p. in 1923 to 826,375 h.p. or by 101.1 p.c. The main reason for the large increase in motors driven by central electric power is the extensive use of water power, chiefly in central electric stations and particularly in Quebec and Ontario.

The following table shows the rated horse power capacity of all power equipment in manufacturing and mining industries operating in 1923 and in 1940.

	Capacity (Horse Power)		Increase	
	1923	1940	H. P.	P. C.
Manufacturing Industries				
Water Wheels	587,191	727,051	139,860	23.8
Steam Engines	554,191	848,596	294,405	53.1
Internal Combustion Engines	46,829	152,240	105,411	225.1
Total	1,188,211	1,727,887	539,676	45.4
Electric Motors on Purchased Power	958,692	3,563,048	2,604,356	271.7
Total Power	2,146,903	5,290,935	3,144,032	146.4
Electric Motors on Power Generated in the Industries	357,136	724,769	367,633	102.9
Total Electric Motors	1,315,828	4,287,817	2,971,989	225.9
Mining Industries				
Water Wheels	27,528	57,075	29,547	107.3
Steam Engines	148,039	156,305	8,266	5.6
Internal Combustion Engines	6,914	101,683	94,769	1,370.7
Total	182,481	315,063	132,582	72.7
Electric Motors on Purchased Power	118,835	746,777	627,942	528.4
Total Power	301,316	1,061,840	760,524	252.4
Electric Motors on Power Generated in the Industries	53,860	101,606	47,746	88.6
Total Electric Motors	172,695	848,383	675,688	390.9
Manufacturing and Mining Industries				
Water Wheels	614,719	784,126	169,407	27.6
Steam Engines	702,230	1,004,901	302,671	43.1
Internal Combustion Engines	53,743	253,923	200,180	372.5
Total	1,370,692	2,042,950	672,258	49.0
Electric Motors on Purchased Power	1,077,527	4,309,825	3,232,298	300.0
Total Power	2,448,219	6,352,775	3,904,556	159.5
Electric Motors on Power Generated in the Industries	410,996	826,375	415,379	101.1
Total Electric Motors	1,488,523	5,136,200	3,647,677	245.1

The ratio of electric motor capacity to total power employed in manufacturing industries has increased fairly steadily, the recessions being few and small. The increase in the ratio has been considerably less since 1929 than during the preceding six years, the increase being 6.4 points from 1929 to 1940 as against 13.4 points from 1923 to 1929. Commencing with 1935 reports data were gathered on spare or idle equipment. For each of the years 1935-1940 the percentage of total equipment not in regular use was approximately the same, around six per cent. The equipment in regular use is more informative than total figures and when data for several years are available these tables will be compiled on the basis of equipment in regular use. In the meantime, comparisons are possible only for total equipment in the operating plants. Although equipment in idle plants might be considered as idle or spare equipment in the industry or group of industries, it is not included in these tables as reports are received only from plants in operation during the year. With increased business the idle equipment would probably be reduced but the bringing into operation of idle plants will not necessarily affect the proportion of equipment in regular use and the proportion idle or held for emergencies.

Table 3 indicates that while the transfer to electric drive from other forms of power has been taking place in all groups of industries, many of them were highly electrified in 1923. The power employed in the pulp and paper industry is by far the greatest of any industry, constituting 35 per cent of the total for all manufacturing industries in 1923 and 40 per cent in 1940, and the growth in the use of electric drive in this industry from 447,847 horse power in 1923 to 1,708,548 horse power in 1940 (including idle or spare equipment) has been an important factor in the increase for the industries as a whole. Deducting this industry from the total shows an increase in electric drive from 62.2 per cent in 1923 to 80.6 per cent in 1940, as against 61.5 per cent to 61.0 per cent with the pulp and paper industry included.

The importance of the pulp and paper industry as a consumer of electricity is even greater than the power equipment data would indicate. This is due to the plants operating more or less continuously throughout each day of the year and to the use of secondary electric power for electric boilers. This industry accounted for 55 per cent of the electricity purchased for power and lighting and 38 per cent of the power purchased for other purposes, 72 per cent of the electricity produced by the industries and 50 per cent of the total electricity used by all manufacturing industries for all purposes and from all sources.

In 1940 these plants reduced their consumption of secondary power in electric boilers by over 1,500,000,000 kw. hrs., using coal instead. The metal and chemical industries increased their consumptions during the year by over a billion kilowatt hours and preliminary data show still larger increases for 1941.

Table 4 shows the power equipment in regular use in manufacturing plants operating during 1940. The data in this table differ from those shown in reports prior to 1936 in that idle equipment is excluded here except for the group totals where totals including and excluding idle equipment are shown. Under each group are shown only the industries having large power installations. Many other industries not listed use electric drive almost exclusively. The consumption of electricity is also shown for each industry listed. This is broken down into "purchased from central stations" and "generated by the industries". The former is also divided between that used for lighting and power purposes and for other purposes, which includes electricity used in electric furnaces, electric boilers, electro-chemical processes, etc. Electric boilers, particularly in pulp and paper mills, took the major portion of this class of electricity in former years and in

most cases it is surplus or off-peak power that is purchased for this purpose. The total consumption for these other purposes was 8,992,520,000 kw. hrs. of purchased power, or over half of the total quantity purchased. A portion of the power generated in the industries also is used for other than lighting and driving machines but a comprehensive break-down is not available.

The mining industries are practically as highly electrified as the manufacturing industries, the ratio increasing from 57.5 per cent in 1923 to 79.3 per cent in 1940. Data for the mining industries are shown in Tables 2 and 7.

The fuels group showed an increase in capacity of motors operated on purchased power from 10,035 horse power in 1923 to 98,785 horse power in 1940 as compared with a decrease of 9,762 horse power in motors operated by power generated by the coal mines and gas and oil wells. These industries apparently have found it more economical to purchase electricity than produce it themselves and also more advantageous than to use steam engines: the capacities of these engines declined from 128,096 horse power to 121,511 horse power. Internal combustion engines, however, increased from 2,235 horse power to 16,713 horse power, but are still a small part of the total power employed.

Table 1. POWER EQUIPMENT OF ALL MANUFACTURING INDUSTRIES IN CANADA

SUMMARY					
Year	Total Power Employed	Electric Motors Operated			Electric Power Per Cent of Total
		By Central Electric Stn. Power	By Power generated in the Industries	Total Motor Capacity	
	H.P.	H.P.	H.P.	H.P.	P.C.
1923	2,146,903	958,692	357,136	1,315,828	61.3
1924	2,538,535	1,256,183	398,001	1,654,184	65.2
1925	2,888,164	1,547,754	434,678	1,982,432	68.6
1926	3,134,248	1,770,334	392,322	2,162,656	69.0
1927	3,287,582	1,924,687	386,555	2,311,242	70.3
1928	3,592,184	2,139,129	457,565	2,596,694	72.3
1929	3,867,979	2,393,684	496,036	2,889,720	74.7
1930	4,051,744	2,518,853	478,548	2,997,401	74.0
1931	4,114,677	2,587,411	539,800	3,127,211	76.0
1932	4,157,420	2,694,164	516,157	3,210,321	77.2
1933	4,147,831	2,671,440	502,706	3,174,147	76.5
1934	4,244,696	2,779,913	550,500	3,330,413	78.5
1935	4,346,775	2,874,693	512,396	3,387,089	77.9
1936	4,461,867	2,977,714	528,501	3,506,215	78.6
1937	4,712,279	3,129,790	602,955	3,732,745	79.2
1938	4,969,723	3,303,804	659,741	3,963,545	79.8
1939	5,056,357	3,575,169	694,450	4,069,619	80.5
1940	5,290,935	3,563,048	724,769	4,287,817	81.1

^ Excluding central electric stations and including idle and reserve equipment.

Table 2.

POWER EMPLOYED IN THE MINING INDUSTRY IN CANADA

Year	Total Power Employed	Electric Motors			Electric Power Per Cent of Total
		Operated by Central Electric Station Power	Operated by Power Generated in the Industry	Total Motor Capacity	
	H.P.	H.P.	H.P.	H.P.	P.C.
1923	301,316	118,835	53,860	172,695	57.3
1924	314,173	125,725	71,376	197,101	62.7
1925	323,882	147,191	64,126	211,317	65.2
1926	336,880	167,241	64,277	231,518	68.7
1927	380,460	202,702	62,067	264,769	69.6
1928	419,434	225,666	68,121	291,787	69.6
1929	450,261	238,974	75,069	314,043	69.7
1930	509,007	297,826	88,585	386,411	75.9
1931	520,638	313,567	79,259	392,826	75.5
1932	482,344	287,130	76,626	363,756	75.4
1933	533,779	322,361	47,407	369,768	69.3
1934	621,071	400,035	66,647	466,682	75.1
1935	688,470	446,247	74,687	520,934	75.7
1936	724,639	474,090	79,140	553,140	76.3
1937	850,489	577,703	101,526	678,229	79.7
1938	874,943	582,510	89,368	671,878	76.8
1939	1,015,200	712,311	101,740	814,051	80.2
1940	1,061,840	746,777	101,606	848,383	79.9

Excluding non-ferrous smelting, salt, cement, clay products and lime, included with "Manufacturing."

Table 3.

SUMMARY OF POWER EMPLOYED IN MANUFACTURING INDUSTRIES

Manufacturing Industries	1923		1938		1939		1940	
	Power		Power		Power		Power	
	Total H.P.	Per Cent Electric Motor	Total H.P.	Per Cent Electric Motor	Total H.P.	Per Cent Electric Motor	Total H.P.	Per Cent Electric Motor
1. Vegetable Products	257,176	65	356,933	79	364,195	80	376,319	78
2. Animal Products	80,895	72	139,899	76	145,931	78	151,321	79
3. Textile Products	107,850	83	217,081	93	234,597	94	246,054	97
4. Wood and Paper Products	1,146,571	50	2,529,793	73	2,579,463	74	2,677,502	74
5. Iron and its Products	213,705	89	751,614	89	730,594	87	763,195	95
6. Non-ferrous Metal Products	99,963	47	535,971	88	549,120	89	598,106	89
7. Non-metallic Mineral Products	131,780	83	258,682	82	257,731	85	270,534	82
8. Chemical & Allied Products	62,447	72	152,567	89	158,300	89	179,741	90
9. Miscellaneous	46,516	86	27,183	97	27,361	98	28,163	97
TOTAL	2,146,903	61	4,969,723	80	5,056,357	81	5,290,935	81

Table 4.

POWER EQUIPMENT OF MANUFACTURING INDUSTRIES IN CANADA, 1940

(Equipment in Regular Use)

	Total Power Employed	Electric Motors Operated			Electric Power Per Cent of Total 100 D-A	Consumption of Electricity				
		By Central Electric Station Power	By Power Generated in the Industries	Total Motor Capacity		Purchased from Central Electric Stations for		Generated by the Industries	Total	
						Power and Lighting	Other Purposes			
	A H.P.	B H.P.	C H.P.	D H.P.	E P.C.	F	G (Thousands of Kilowatt Hours)	H	I	
<u>GROUP 1. VEGETABLE PRODUCTS</u>	x	376,319	264,165	30,631	294,796	78.3				
		353,826	248,639	28,797	277,436	78.4	393,765	35,949	37,663	467,377
Biscuits, confectionery, etc.		22,733	20,217	526	20,743	91.2	26,532	...	37	26,569
Bread and bakery products		18,253	16,858	115	16,973	93.0	32,658	8	...	32,646
Breweries		23,790	18,981	618	19,597	82.4	23,933	2,126	165	26,224
Flour and feed mills		111,105	59,147	3,514	62,661	56.4	113,536	1	1,057	114,594
Fruit and vegetable products		20,263	12,647	1,144	13,791	68.1	8,721	2	179	8,902
Rubber goods, footwear, etc.		73,020	65,838	845	66,683	91.3	109,049	33,801	1,921	144,771
Sugar refineries		22,922	7,474	14,497	21,971	95.9	13,238	...	17,669	30,907
<u>GROUP 2. ANIMAL PRODUCTS</u>	x	151,321	115,452	3,572	119,024	78.7				
		142,212	109,829	3,514	113,343	79.7	210,921	202	5,730	216,853
Butter and cheese		44,683	33,244	...	33,244	74.4	38,077	16	...	38,093
Fish curing and packing		15,695	4,655	1,702	6,357	40.4	8,479	3	3,479	11,961
Leather tanneries		16,483	14,257	548	14,805	89.8	17,877	8	...	17,885
Slaughtering and meat packing		42,517	38,990	150	39,140	92.1	112,825	50	406	113,281
<u>GROUP 3. TEXTILES</u>	x	246,054	193,433	42,050	237,483	96.5				
		229,906	184,488	41,571	226,059	96.3	457,369	49,300	70,001	576,670
Cotton yarn and cloth		107,873	84,246	28,211	112,457	100.0	244,301	21,203	48,497	514,001
Hosiery and knitted goods		18,285	11,918	3,999	15,918	87.0	26,370	...	7,510	33,880
Silk and artificial silk		27,570	21,273	3,047	25,320	91.8	86,547	28,093	...	114,640
<u>GROUP 4. WOOD & PAPER PRODUCTS</u>	x	2,877,502	1,495,438	474,068	1,969,506	73.6				
		2,554,187	1,433,109	457,445	1,890,554	74.0	5,167,356	3,398,286	1,977,081	10,542,723
Furniture		21,333	13,807	3,792	17,599	81.6	14,132	204	2,890	17,226
Planing mills, sash and door		51,314	31,047	2,700	33,747	65.8	25,269	...	2,410	27,979
Printing and publishing		29,070	22,284	...	22,284	97.3	35,327	435	11	35,773
Pulp and paper		1,986,667	1,200,724	375,254	1,625,978	82.3	4,986,302	3,381,448	1,890,388	10,256,138
Saw mills		369,957	27,334	68,902	96,236	26.0	21,924	14	71,797	93,735

<u>GROUP 5. IRON & ITS PRODUCTS</u>	x	763,193	594,761	189,235	723,396	94.9				
		709,936	572,370	136,205	699,575	98.5	761,907	763,084	147,934	1,872,925
Agricultural implements		20,784	16,055	...	18,053	86.9	18,504	...	...	18,504
Automobiles		52,158	21,999	27,463	49,468	94.8	24,401	...	66,674	91,075
Automobile supplies		47,813	46,156	...	46,156	96.5	63,096	...	...	63,096
Bridge and structural steel		28,652	26,675	1,108	27,781	97.0	15,896	...	...	15,896
Castings, iron		46,419	44,027	684	44,711	96.3	44,005	258	299	44,562
Machinery		54,376	49,525	3,853	53,358	98.1	39,861	...	...	39,861
Primary iron and steel		208,160	140,964	79,475	220,439	100.0	297,511	721,287	80,773	1,099,571
Railway rolling stock		107,991	96,911	5,912	102,823	95.2	86,233	33,646	...	119,939
Shipbuilding and repairs		42,047	33,770	117	33,887	80.0	23,347	...	187	23,534
<u>GROUP 6. NON-FERROUS METAL PRODUCTS</u>	x	598,106	517,359	16,108	533,467	89.2				
		559,335	480,699	15,642	496,341	88.7	956,543	3,001,087	274,087	4,231,717
Brass and copper products		26,338	25,438	90	25,528	96.9	31,033	20,530	...	51,563
Electrical apparatus & supplies		85,794	74,672	12,137	86,809	100.0	94,752	1,826	12,859	109,437
Non-ferrous metal, smelting and refining		421,974	355,370	3,415	356,785	85.0	794,316	2,974,008	261,082	4,029,406
<u>GROUP 7. NON-METALLIC MINERAL PRODUCTS</u>	x	270,534	212,041	10,397	222,438	82.2				
		238,827	189,331	10,337	199,718	83.6	326,238	521,621	15,458	863,317
Cement		74,218	71,552	763	72,315	97.4	126,738	...	...	126,738
Clay products from domestic clays		20,278	13,667	107	13,874	68.4	10,781	274	286	11,341
Coke and gas products		24,782	15,531	6,265	21,796	88.0	31,385	8,478	6,500	46,563
Petroleum products		52,514	28,280	75	28,355	54.0	72,742	...	641	73,383
<u>GROUP 8. CHEMICALS AND CHEMICAL PRODUCTS</u>	(x	179,741	144,610	16,315	160,925	89.5				
	(	165,862	135,792	16,329	150,721	90.9	645,853	1,222,991	109,677	1,978,521
Acids, alkalis and salts		77,940	58,100	10,065	68,225	87.5	117,645	1,164,650	107,034	1,389,329
Miscellaneous chemical products		34,741	27,236	4,570	31,806	91.6	27,036	58,009	2,052	87,097
<u>GROUP 9. MISCELLANEOUS INDUSTRIES</u>	x	28,163	24,789	2,393	27,182	96.5				
		26,219	24,013	1,936	25,949	99.0	42,523	...	3,287	45,810
<u>TOTAL ALL INDUSTRIES - 1940</u>	x	5,290,935	3,563,048	724,769	4,287,817	81.0				
		4,980,310	3,379,270	700,426	4,079,696	81.9	8,962,475	8,992,520	2,640,919	20,695,914
<u>1939</u>	x	5,056,357	3,375,169	694,450	4,069,619	80.5				
		4,712,991	3,196,107	668,941	3,865,048	82.0	7,872,186	9,588,910	2,569,558	19,450,454

x Including equipment idle or in reserve. These totals are comparable with data in reports prior to 1936.

Table 5.

POWER EMPLOYED IN MANUFACTURING INDUSTRIES, BY PROVINCES, 1940.

(In Regular Use)

Provinces	Total Power Employed	Electric Motors Operated			Electric Power Per Cent of Total	Consumption of Electricity			Total
		By Central Electric Station Power	By Power Generated in the Industries	Total Motor Capacity		Purchased from Central Electric Stations		Generated by the Industries	
						For Power & Lighting	For Other Purposes		
	H.P.	H.P.	H.P.	H.P.	P.C.	(Thousands of Kilowatt Hours)			
Prince Edward Island	3,755	762	7	769	20.5	491	...	5	496
Nova Scotia	153,438	73,377	44,339	117,716	76.8	193,047	1,794	119,143	313,384
New Brunswick	204,448	107,090	43,081	150,171	73.4	342,830	18,221	179,443	540,494
Quebec	1,843,403	1,542,742	160,474	1,503,216	81.5	4,268,452	5,486,808	1,015,768	10,771,028
Ontario	1,954,920	1,389,198	306,204	1,695,402	87.3	3,041,882	2,702,357	897,018	6,641,255
Manitoba	165,648	145,787	4,151	149,938	90.6	282,714	197,325	2,902	479,941
Saskatchewan	56,858	37,515	59	37,574	66.1	51,610	51,761	227	103,598
Alberta	83,815	46,306	4,134	50,440	60.2	61,228	466	5,603	67,297
B.C. and Yukon	514,025	254,493	137,977	392,470	76.4	720,221	543,788	420,312	1,684,821
TOTAL	4,980,310	3,379,270	700,426	4,079,696	81.3	8,962,475	8,992,520	2,640,919	20,595,914
<u>INCLUDING IDLE AND RESERVE EQUIPMENT</u>									
Prince Edward Island	3,975	851	7	858	21.6				
Nova Scotia	163,430	78,122	44,339	122,461	74.9				
New Brunswick	232,827	114,598	43,685	158,283	68.0				
Quebec	1,947,859	1,394,867	167,710	1,562,577	80.2				
Ontario	2,078,934	1,461,746	321,588	1,782,734	85.8				
Manitoba	170,873	149,706	4,198	153,904	90.1				
Saskatchewan	60,127	39,388	59	39,447	65.6				
Alberta	90,213	50,699	4,134	54,833	60.8				
B.C. and Yukon	542,697	273,071	139,049	412,120	75.9				
TOTAL	5,290,935	3,563,048	724,769	4,287,817	81.0				

Table 6

POWER EQUIPMENT - IN REGULAR USE AND INCLUDING IDLE AND RESERVE EQUIPMENT, 1940.

MANUFACTURING INDUSTRIES

	TOTAL POWER EMPLOYED		ELECTRIC MOTORS OPERATED BY						ELECTRIC POWER		CONSUMPTION OF ELECTRICITY				
	In Regular Use	Incl. Idle & Reserve Equipment	Central Station Power		Power Generated in the Industries		Total		Per Cent of Total		Purchased from Central Electric Stations		Generated By The Industries	Total	
			In Regular Use	Incl. Idle & Reserve Equipment	In Regular Use	Incl. Idle & Reserve Equipment	In Regular Use	Incl. Idle & Reserve Equipment	In Regular Use	Incl. Idle & Reserve Equipment	For Power & Lighting	For Other Purposes			
	A H.P.	B H.P.	C H.P.	D H.P.	E H.P.	F H.P.	G H.P.	H H.P.	I P.C.	J P.C.	K	L (Thousands of Kilowatt Hours)		M	N
1. Vegetable Products	555,828	376,519	248,639	264,165	28,767	30,651	277,436	294,796	78.4	78.5	595,765	35,949	57,663	467,577	
2. Animal Products	142,212	151,321	109,829	115,452	5,514	5,572	115,245	119,024	79.7	78.7	210,921	202	5,750	216,855	
3. Textiles and Textile Products	229,906	246,054	184,488	195,433	41,571	42,050	226,059	237,485	98.3	96.5	457,369	49,500	70,001	576,670	
4. Wood and Paper Products	2,554,187	2,677,502	1,433,109	1,495,438	457,445	474,068	1,890,554	1,969,506	74.0	75.6	5,167,356	3,398,286	1,977,061	10,542,722	
5. Iron and its Products	709,936	765,195	575,370	594,761	128,205	129,235	699,575	725,996	98.5	94.9	761,907	765,084	147,934	1,672,925	
6. Non-ferrous Metal Products	559,355	598,106	480,699	517,359	15,642	16,108	496,541	533,467	89.7	89.2	958,543	3,001,087	274,087	4,231,717	
7. Non-metallic Mineral Products	258,827	270,534	169,351	212,041	10,367	10,397	199,718	222,438	85.6	82.2	326,238	521,621	15,458	863,317	
8. Chemicals and Chemical Products	165,862	179,741	155,792	144,610	14,929	16,315	150,721	160,925	90.9	89.5	645,853	1,222,991	109,677	1,978,521	
9. Miscellaneous Industries	26,219	28,163	24,013	24,789	1,936	2,393	25,949	27,182	98.0	96.5	42,523	...	3,287	45,810	
TOTAL - 1940	4,980,310	5,290,935	3,379,270	3,563,048	700,428	724,769	4,079,696	4,287,817	81.9	81.0	8,962,475	8,992,520	2,640,919	20,595,914	
" - 1939	4,712,991	5,056,357	3,196,107	3,375,169	668,941	694,450	3,865,048	4,089,619	82.0	80.5	7,672,186	9,368,910	2,369,338	19,450,454	
Per cent change	+ 5.7	+ 4.6	+ 5.7	+ 5.6	+ 4.7	+ 4.4	+ 5.6	+ 5.4			+ 16.8	- 4.2	+ 11.5	+ 6.0	
Table 7. MINING INDUSTRIES															
Metal Mining	619,722	687,480	520,775	548,745	60,296	68,401	581,071	617,146	95.8	89.8	1,237,174	...	245,949	1,483,123	
Non-metal mining	76,188	82,894	64,120	69,372	2,721	2,743	66,841	71,115	87.7	85.8	143,199	...	3,117	146,316	
Sand, Gravel & Stone	46,587	52,457	27,581	30,875	2,394	2,916	29,965	33,791	64.3	64.4	23,307	22	1,777	25,106	
Fuels	226,625	239,009	97,710	98,785	24,817	27,546	122,527	126,331	54.1	52.8	147,425	...	52,234	199,659	
TOTAL - 1940	969,122	1,061,840	710,186	746,777	90,218	101,606	800,404	848,383	82.6	79.9	1,551,105	22	303,077	1,854,204	
" - 1939	941,335	1,015,200	675,974	712,311	85,678	101,740	761,852	814,051	80.9	80.2	1,462,942	16,236	262,161	1,761,339	
Per cent change	+ 3.0	+ 4.6	+ 5.1	+ 4.8	+ 5.1	- 0.1	+ 5.1	+ 4.2			+ 4.6		+ 15.6	+ 5.3	
Total Tables 6 and 7															
1940	5,949,432	6,352,775	4,089,456	4,309,825	790,644	826,375	4,880,100	5,136,200	82.0	80.8	10,513,580	8,992,542	2,943,996	22,450,118	
1939	5,654,326	6,071,557	3,872,081	4,087,480	754,819	796,190	4,626,900	4,883,670	81.8	80.4	9,153,128	9,405,146	2,631,499	21,191,773	
Per cent change	+ 5.2	+ 4.6	+ 5.6	+ 5.4	+ 4.7	+ 3.9	+ 5.5	+ 5.2			+ 14.8	- 4.4	+ 11.9	+ 6.9	

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