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Published by Authority of the HON. JAMES A. MacKINNON, M.P. 49-28-5-43
Minister of Trade and Commerce Price -
25 cents

DEPARTMENT OF TRADE AND COMMERCE
DOMINION BUREAU OF STATISTICS
CENSUS OF INDUSTRY
MINING, METALLURGICAL AND CHEMICAL BRANCH
OTTAWA - CANADA

DOMINION BUREAU
OF STATISTICS

JUN 12 1943

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ANNUAL INDUSTRY REPORT

IRON AND STEEL AND THEIR PRODUCTS GROUP

THE BOILERS, TANKS AND PLATE WORK INDUSTRY, 1941

Production by the 40 establishments included in the Boilers, Tanks and Plate Work Industry in 1941 was valued at \$23,088,783. Twenty-three of these works were located in Ontario, 8 in Quebec, 5 in British Columbia, 2 in Nova Scotia and 1 in each of Manitoba and Saskatchewan. These concerns had a fixed and working capital of \$19,702,179 and gave employment to a monthly average of 4,470 people who were paid \$7,286,909 in salaries and wages. Materials used in manufacturing processes cost \$10,166,384 and expenditures for fuel and electricity amounted to \$437,270.

Tables 1 to 10 of this report deal with the Boilers, Tanks and Plate Work Industry, which covers the operations of the establishments that make as their chief products such articles as boilers or heating radiators, tanks, and miscellaneous products from steel plate, such as, bins, hoppers, smokestacks, etc. Tables 11 and 12 give the totals for Canada, from all industries, covering the production of boilers and radiators. The total output value in 1941 for heating and power boilers was \$10,389,775, and for heating radiators \$2,486,802.

Table 1 - PRINCIPAL STATISTICS OF THE BOILERS, TANKS AND PLATE WORK INDUSTRY,
1930-1941

Year	Number of plants	Capital employed \$	Average number of em- ployees	Salaries and wages \$	Cost of fuel and electricity at works \$	Cost of materials at works \$	Gross sell- ing value of products at works \$
1930	35	9,982,016	1,924	2,649,804	159,813	4,565,856	9,597,239
1931	40	10,833,223	1,803	2,376,416	135,668	2,640,600	6,367,008
1932	41	10,231,811	1,391	1,636,953	116,755	1,527,402	4,465,089
1933	50	13,351,336	1,572	1,742,257	168,784	1,553,690	4,445,256
1934	51	14,202,122	2,047	2,291,422	194,556	2,432,907	6,485,814
1935	56	15,417,364	2,410	2,771,854	231,328	2,774,327	7,365,523
1936	56	14,848,789	2,519	3,066,242	244,687	3,567,813	8,305,860
1937	54	13,875,620	2,936	3,694,393	226,991	4,872,296	11,211,501
1938	55	15,500,319	2,919	3,704,804	219,781	4,345,518	10,840,220
1939	41	14,324,828	2,491	3,150,560	217,111	3,673,208	8,799,806
1940	41	16,057,039	3,307	4,924,993	306,450	6,544,887	14,865,343
1941	40	19,702,179	4,470	7,286,909	437,270	10,166,384	23,088,783

NOTE: Profits or losses cannot be calculated from the above figures as data are not available for general expense items, such as, interest, rent, depreciation, taxes, insurance, advertising, etc.

Boilers

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Table 2 - PRINCIPAL STATISTICS, BY PROVINCES, 1940 and 1941

	Number of plants	Capital employed \$	Average number of em- ployees	Salaries and wages \$	Cost of fuel and electricity at works \$	Cost of materials at works \$	Gross sell- ing value of products at works \$
<u>1940</u>							
Quebec	10	2,542,347	615	942,257	52,820	1,519,727	3,322,467
Ontario	21	12,259,154	2,417	3,559,014	220,574	4,403,128	10,210,136
British Columbia	6	504,484	96	160,426	6,185	202,143	508,907
Nova Scotia	2)						
Manitoba	1)	751,054	179	263,296	26,871	419,889	823,833
Saskatchewan ...	1)						
CANADA	41	16,057,039	3,307	4,924,993	306,450	6,544,887	14,865,343
<u>1941</u>							
Quebec	8	3,986,489	889	1,547,995	100,322	2,334,149	5,217,642
Ontario	23	13,670,219	3,188	5,070,839	286,282	6,519,771	15,380,776
British Columbia	5	827,112	101	212,477	11,521	743,166	1,190,119
Nova Scotia	2)						
Manitoba	1)	1,218,359	292	455,598	39,145	569,298	1,300,246
Saskatchewan ...	1)						
CANADA	40	19,702,179	4,470	7,286,909	437,270	10,166,384	23,088,783

Table 3 - CAPITAL EMPLOYED, 1940 and 1941

Province	Present value of land, build- ings, machinery and equipment \$	Inventory value of materials and finished products on hand and stocks in process \$	Operating capi- tal (cash, bills and accounts receivable, pre- paid expenses, etc.) \$	TOTAL CAPITAL EMPLOYED \$
<u>1940</u>				
Quebec	1,162,105	749,444	630,798	2,542,347
Ontario	6,959,797	2,801,611	2,497,746	12,259,154
British Columbia	279,045	140,100	85,339	504,484
Other provinces.	259,628	278,623	212,803	751,054
TOTAL	8,660,575	3,969,778	3,426,686	16,057,039
<u>1941</u>				
Quebec	1,145,482	1,058,579	1,782,428	3,986,489
Ontario	7,174,939	3,615,178	2,880,102	13,670,219
British Columbia	395,267	281,240	150,605	827,112
Other provinces.	324,098	513,747	380,514	1,218,359
TOTAL	9,039,786	5,468,744	5,193,649	19,702,179

Table 4 - EMPLOYEES, SALARIES AND WAGES, BY PROVINCES, 1940 and 1941

Table 4 - EMPLOYEES, SALARIES AND WAGES, BY PROVINCES, 1940 and 1941

Provinces	Average Number of Employees					Salaries \$	Wages \$	TOTAL
	On Salaries		On Wages		Total			SALARIES and WAGES \$
	Male	Female	Male	Female				
1940								
Quebec	116	22	475	2	615	211,700	730,557	942,257
Ontario	357	111	1,941	8	2,417	923,770	2,635,244	3,559,014
British Columbia	30	1	64	1	96	55,377	105,049	160,426
Other provinces.	30	5	144	...	179	70,871	192,425	263,296
TOTAL	533	139	2,624	11	3,307	1,261,718	3,663,275	4,924,993
1941								
Quebec	142	35	710	2	889	290,030	1,257,965	1,547,995
Ontario	456	164	2,538	30	3,188	1,174,773	3,896,066	5,070,839
British Columbia	13	3	85	...	101	53,128	159,349	212,477
Other provinces.	18	7	265	2	292	60,890	394,708	455,598
TOTAL	629	209	3,598	34	4,470	1,578,821	5,708,088	7,286,909

Table 5 - WAGE-EARNERS, BY MONTHS, 1940 and 1941 (On the last work-day of each month)

Month	1940			1941		
	Male	Female	TOTAL	Male	Female	TOTAL
January	1,952	2	1,954	3,268	25	3,293
February	2,002	2	2,004	3,277	28	3,305
March	2,087	3	2,090	3,256	28	3,284
April	2,219	5	2,224	3,266	27	3,293
May	2,415	8	2,423	3,439	25	3,464
June	2,602	9	2,611	3,553	26	3,579
July	2,772	14	2,786	3,648	29	3,677
August	2,950	14	2,964	3,803	34	3,837
September	3,018	13	3,031	3,873	37	3,910
October	3,184	19	3,203	3,992	41	4,033
November	3,187	17	3,204	3,898	51	3,949
December	3,072	22	3,094	3,888	48	3,936
AVERAGE	2,624	11	2,635	3,598	34	3,632

Table 6 - REGULAR HOURS WORKED PER WEEK BY WAGE-EARNERS, 1940 and 1941 (In one week of highest employment; overtime included)

Regular hours worked per week	Number of wage-earners		Regular hours worked per week	Number of wage-earners	
	1940	1941		1940	1941
30 hours or less	77	126	51-54 hours	339	382
31-43 hours	105	232	55 hours	99	704
44 hours	323	203	56-64 hours	1,004	928
45-47 hours	108	150	65 hours and over	358	616
48 hours	358	364	Total	3,449	4,170
49-50 hours	678	465	Total wages paid in that week.. \$	101,555	138,013

Table 7 - FUEL AND ELECTRICITY USED, 1940 and 1941

Kinds	Unit of measure	1 9 4 0		1 9 4 1	
		Quantity	Cost at works	Quantity	Cost at works
			\$		\$
Bituminous coal - Canadian	ton	4,224	25,857	4,316	31,966
Imported	ton	5,087	33,981	13,477	102,126
Anthracite coal	ton	6,274	43,994	1,246	11,028
Lignite coal	ton	130	455	120	420
Coke	ton	1,447	13,168	2,175	22,978
Gasoline	Imp. gal.	88,733	20,326	203,436	55,174
Kerosene	Imp. gal.	3,460	584	5,149	1,037
Fuel oil	Imp. gal.	283,676	26,599	416,042	34,003
Wood	cord	416	2,112	509	3,121
Gas - Manufactured	M cu.ft.	610	648	5,071	5,663
Natural	M cu.ft.	5,790	4,497	2,647	1,533
Electricity purchased	K.W.H.	11,326,434	133,560	15,917,309	167,363
Other fuel .....	...	...	669	...	858
TOTAL .....	...	...	306,450	...	437,270

Table 8 - POWER EQUIPMENT, 1940 and 1941

Type	Ordinarily in Use		In Reserve or Idle	
	Number of units	Total rated horse power	Number of units	Total rated horse power
<u>1 9 4 0</u>				
Steam engines and steam turbines	29	2,255	...	...
Diesel engines	2	75	...	...
Gasoline, gas and oil engines (except diesel)	35	675	1	20
Electric motors run by purchased power	822	13,091	1	50
TOTAL	888	16,096	2	70
Electric motors run by above primary units	185	3,651	...	...
Stationary boilers	22	2,952	...	...
<u>1 9 4 1</u>				
Steam engines and steam turbines	29	2,255	...	...
Diesel engines	2	75	...	...
Gasoline, gas and oil engines (except diesel)	39	770	1	20
Electric motors run by purchased power	864	12,520	4	95
TOTAL	934	15,620	5	115
Electric motors run by above primary units	212	3,751
Stationary boilers	27	3,442	1	90

Boilers

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Table 9 - MATERIALS USED, 1940 and 1941

Table 9 - MATERIALS USED, 1940 and 1941					
Materials	Unit of measure	1 9 4 0		1 9 4 1	
		Quantity	Cost at works \$	Quantity	Cost at works \$
Iron -					
Pig iron	ton	13,688	349,002	18,459	446,741
Iron castings	ton	2,240	295,213	4,874	769,892
Steel -					
Steel castings	ton	197	49,714	401	118,719
Bars and rods	ton	1,351	94,450	2,231	172,516
Forgings	ton	...	119,648	944	290,769
Shafting	ton	32	5,349	73	13,719
Sheets, black	ton	5,544	359,866	4,472	322,528
Sheets, galvanized	ton	594	47,660	378	38,989
Strip	ton	2	136	2	156
Plates, boiler	ton	12,652	746,181	29,781	1,734,662
Plates, other	ton	10,312	639,828	2,137	142,506
Stampings	ton	...	9,567	...	12,327
Structural shapes	ton	5,941	348,897	8,495	568,320
Boiler tubes .....	...	...	358,180	...	532,409
Sheets, tin plate	base box	284	2,976	143	1,602
Wire	ton	52	9,511	63	10,618
Alloy steels .....	...	...	4,722	...	14,013
Scrap iron and steel	ton	25,958	469,052	28,298	722,156
Other iron and steel .....	...	...	3,074	...	13,390
Ferro-alloys .....	...	...	15,339	...	32,955
Non-Ferrous Metals, including scrap -					
Aluminium	pound	4,300	669	1,102	235
Brass and bronze	pound	297,056	105,049	283,402	75,105
Copper	pound	85,049	13,482	19,867	7,166
Lead	pound	30,586	1,847	1,720	105
Nickel	pound	13,470	4,313	21,662	6,712
Tin	pound	72,654	32,133	28,498	12,438
Zinc	pound	202,368	10,664	489,821	22,224
Babbitt metals and solders	pound	51,810	30,340	99,493	57,398
Other non-ferrous metals .....	...	...	...	...	2,178
Other Materials -					
Parts for engines, boilers, etc. ....	...	...	795,619	...	969,188
Iron and steel pipe and fittings ....	...	...	67,215	...	221,284
Bolts, nuts, rivets and screws..	...	...	93,271	...	355,612
Electrical goods, including					
motors .....	...	...	4,391	...	81,390
Paints, oils and varnishes .....	...	...	22,066	...	62,035
Asbestos and other linings and					
coverings .....	...	...	10,114	...	24,378
Foundry coke	ton	11,140	155,999	13,209	204,451
Moulding sands	ton	5,076	30,225	8,225	44,430
Silica sand for sand-blasting ..	ton	42	430	159	1,494
Core sands	ton	10,594	26,146	12,448	34,516
Other foundry sands	ton	882	10,639	...	4,197
Starch	pound
Plumbago and graphite	pound	15,663	1,195	12,230	851

Boilers

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Table 9 - MATERIALS USED, 1940 and 1941 (Concluded)

Materials	Unit of measure	1 9 4 0	Cost at works	1 9 4 1	Cost at works
		Quantity		Quantity	
			\$		\$
Other Materials (Concluded) -					
Other foundry facings	pound	...	14,424	...	14,336
Patterns and models .....	...	...	1,901	...	27,772
Lumber	M ft.b.m.	702	26,978	860	41,171
Firebrick	No.	79,044	7,500	114,952	11,724
Fireclay	ton	669	5,536	838	8,106
Cupola blocks	No.	5,771	2,108	9,125	2,105
Core oil	Imp.gal.	41,201	21,883	41,340	27,185
Core compounds	pound	13,360	721	38,434	2,667
Muriatic acid	pound	52,800	1,135	51,526	1,100
Sulphuric acid, 66° Be	pound	50,220	1,075	65,090	1,509
Acetylene	cu.ft.	667,087	14,933	1,405,219	37,542
Oxygen	cu.ft.	1,099,608	14,284	2,550,409	38,699
Shipping containers .....	...	...	8,860	...	18,932
All other materials .....	...	...	1,078,877	...	1,787,162
TOTAL .....	...	...	6,544,887	...	10,166,384

Table 10 - PRODUCTS MADE IN THE BOILERS, TANKS AND PLATE WORK INDUSTRY, 1940 and 1941

NOTE: Data in this table are for the Boilers, Tanks and Plate Work Industry, which includes only the manufacturers that made boilers, tanks, etc., as their main products. Figures for the individual commodities may not represent the total output in Canada as these articles may have been made also in other industries. (See Tables 11 and 12).

Products	Unit of measure	1 9 4 0	Selling value at works	1 9 4 1	Selling value at works
		Quantity		Quantity	
			\$		\$
Boilers, heating -					
Cast iron sectional - hot water and steam	No.	10,654	1,098,396	12,830	1,445,630
Steel firebox, locomotive type..	No.	49	35,034	40	43,030
Horizontal return tubular	No.	32	8,750	45	12,500
Electric welded, steel	No.	289	209,007	259	335,200
Water tube, steel	No.	4	533	3	14,599
Boilers, power -					
Water tube - horizontal type ...	No.	10	91,511	10	32,724
Water tube - vertical type	No.	1	783	6	1,500
Water tube - bent tube type	No.	12	72,614	50	459,563
Return tubular power, horizontal	No.	110	481,894	113	182,773
Marine type	No.	32	688,309	...	1,931,278
Steel firebox, locomotive type..	No.	31	45,998	39	73,000
Fire tube, vertical type	No.	148	65,670	157	77,918
All other boilers	No.	51	11,359	25	13,959
Boiler parts .....	...	...	117,582	...	86,702
Radiators, heating -					
Cast iron, standing	Sq.ft.	5,385,026	1,464,715	5,962,025	1,772,357
Cast iron, concealed	Sq.ft.	373,262	83,288	455,108	208,697
Miscellaneous plate work -					
Bins and hoppers	35,141	...	21,422

Boilers

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Table 10 - PRODUCTS MADE IN THE BOILERS, TANKS AND PLATE WORK INDUSTRY, 1940 and 1941
(Concluded)

Products	Unit of measure	1 9 4 0		1 9 4 1	
		Quantity	Selling value at works \$	Quantity	Selling value at works \$
Miscellaneous plate work (Con.) -					
Smokestacks .....	...	...	38,364	...	47,777
Smoke breeching .....	...	...	27,884	...	13,788
Rivetted and welded steel pipe..	...	...	14,977	...	4,626
Other plate work .....	...	...	2,984,450	...	3,680,570
Structural work, including fabricated and erected shapes	ton	4,572	586,947	...	1,155,791
Tanks -					
Steel storage for water and fuel oil .....	...	...	665,332	...	1,161,682
Steel, septic .....	...	...	79,681	...	30,876
Steel, pneumatic .....	...	...	187,026	...	97,295
All other pressure tanks .....	...	...	52,927	...	353,880
Tank heaters for domestic water supply	No.	11,786	183,378	12,042	165,958
Pumps, all kinds, and parts .....	...	...	192,236	...	161,149
Engines and parts .....	...	...	1,736,173	...	3,307,463
Stokers, mechanical, and parts ..	...	...	99,589	...	141,494
Receipts from custom work and repairs .....	...	...	578,903	...	1,597,927
All other products (x) .....	...	...	2,916,892	...	4,475,655
TOTAL .....	...	...	14,865,343	...	23,088,783

(x) Includes data for items made by less than three firms, such as, cast iron soil pipe, furnaces, pulverizers, milk cans, etc.

Table 11 - TOTAL PRODUCTION IN CANADA OF HEATING AND POWER BOILERS, 1940 and 1941
(From All Industries)

Types	1 9 4 0		1 9 4 1	
	Number of boilers	Total selling value at plant \$	Number of boilers	Total selling value at plant \$
Heating boilers -				
Cast iron sectional hot water and steam	10,872	1,115,491	13,034	1,462,480
Steel firebox, locomotive type	49	35,034	40	43,030
Horizontal return tubular	40	15,895	45	12,500
Steel water tube	4	533	3	14,599
Steel welded	454	392,165	439	620,298
Power boilers -				
Water tube, horizontal type ..	11	92,361	11	35,174
Water tube, vertical type	1	783	6	1,500
Water tube, bent tube type ...	14	83,227	51	465,063
Horizontal return tubular	122	505,800	139	234,153
Marine type	53	1,419,419	386	5,948,613
Steel firebox, locomotive type ..	46	58,395	51	89,568
Firetube, vertical type	156	69,915	187	92,691
Boilers, type not specified	928,047	...	1,372,156
TOTAL	4,717,065	...	10,389,775



Boilers

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Table 12 - TOTAL PRODUCTION OF HEATING RADIATORS, 1940 and 1941 (From All Industries)

		1940		1941	
Type		Quantity	Selling value at works	Quantity	Selling value at works
			\$		\$
Direct or standing type, cast iron	sq.ft.	5,385,026	1,464,715	5,962,025	1,772,357
Concealed type - Cast iron ..	sq.ft.	373,262	83,288	455,108	208,697
Sheet metal.	sq.ft.	893,500	323,314	1,487,590	505,748
TOTAL		sq.ft.	6,651,788	1,871,317	7,904,723
				2,486,802	
