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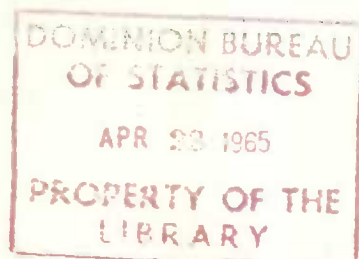
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ANNUAL



BOILER AND PLATE WORKS 1962

ANNUAL CENSUS
OF MANUFACTURES



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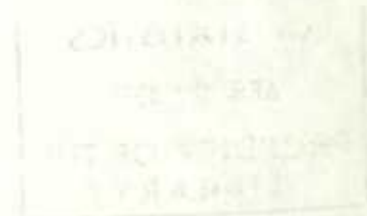
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SYMBOLS

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.
- r revised figures.



BOILER AND PLATE WORKS

1962

Data presented in this report under the heading of Boiler and Plate Works 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 Boiler and Plate Works in the revised Standard Industrial Classification covers the operations of establishments primarily engaged in the manufacture of heating and power boilers except cast iron sectional heating boilers, storage tanks, pressure tanks, smoke-stacks, plate work and similar boiler-shop products. Some establishments in this industry engage both in the fabrication of the product and its installation. In these cases the establishment is classified on the basis of its principal activity, i.e. either fabricating or installing the product. Establishments installing mainly products of their own manufacture are considered as primarily engaged in fabrication, and are included in this industry, but those primarily engaged in erecting boilers or smoke-stacks from purchased parts are included in Industry No. 409—Other Construction. Establishments primarily engaged in fabricating and erecting large storage tanks which must be assembled at the site are included in Industry No. 302—Fabricated Structural Metal Industry.

The introduction of the final stage of the establishment concept in the Annual Census of Manufactures has resulted in certain changes and necessitated some adjustments to the statistics. Refer to the Explanatory Notes section of this report for a more detailed explanation. For the most part the changes in the manufacturing activity of the industry under review resulting from the implementation of the final stage of the establishment concept were of a relatively minor nature as evidenced in the comparative series of statistics shown in Tables 1 and 1 A.

TABLE 1. Principal Statistics — Manufacturing Activity,¹ 1957 - 61
Basis: Revised Standard Industrial Classification and New Establishment Concept²

Year	Estab- lish- ments	Employees						Cost of fuel and elec- tricity ⁴	Cost of materials and supplies used ⁴	Value of shipments of goods of own manu- facture ⁴	Value added ⁴
		Production and related workers ⁴		Administrative and office employees ³		Total ⁴					
		Number	Wages	Number	Salaries	Number	Salaries and wages				
	No.		\$'000		\$'000			\$'000			
1957	78	3,815	14,468	1,412	6,808	5,227	21,277	909	35,861	66,137	..
1958	75	3,286	12,368	1,459	6,951	4,745	19,319	812	29,992	61,441	30,031
1959	72	3,428	13,279	1,479	7,303	4,907	20,582	842	36,025	66,916	31,874
1960	70	3,307	13,687	1,399	7,050	4,706	20,737	772	33,117	67,974	33,210
1961	68	3,133	12,839	1,378	7,223	4,511	20,062	801	36,078	69,011	31,351

See footnotes following Table 3 A.

TABLE 1 A. Principal Statistics — Manufacturing Activity and Total Activity,¹ 1961 and 1962
Basis: Revised Standard Industrial Classification and New Establishment Concept²

Year and province	Estab- lish- ments	Manufacturing activity							Total activity				
		Production and related workers ⁴			Cost of fuel and elec- tricity ⁵	Cost of materials and supplies used ⁴	Value of shipments of goods of own manu- facture ⁴	Value added ⁴	Working owners and partners ⁶		Total employees ⁷		Total value added ⁸
		Number	Man- hours paid	Wages					Number	With- drawals	Number	Salaries and wages	
	No.		'000			\$'000				\$'000		\$'000	
1961													
Nova Scotia	2	1,195	2,536	4,195	231	16,669	25,191	8,608	10	10	1,519	5,783	8,849
Quebec	13								10	10			
Ontario	34	1,530	3,214	6,567	384	13,761	33,537	18,146	10	10	2,494	11,930	18,819
Manitoba	1	303	677	1,554	154	4,877	8,517	3,601	—	—	555	2,730	3,298
Saskatchewan	1								—	—			
Alberta	9	105	212	523	33	771	1,767	994	10	10	141	735	1,113
British Columbia	8								10	10			
Totals	68	3,133	6,640	12,839	801	36,078	69,011	31,349	12	51	4,709	21,178	32,079
1962													
Nova Scotia	2	1,345	2,740	5,614	247	17,240	28,230	12,489	10	10	1,866	8,521	13,004
Quebec	13								10	10			
Ontario	31	1,690	3,370	7,651	397	14,609	36,043	20,596	10	10	2,531	12,607	21,552
Manitoba	1	302	634	1,453	167	3,712	8,066	3,784	—	—	515	2,369	3,912
Saskatchewan	1								—	—			
Alberta	9	92	192	443	27	840	1,985	1,118	—	—	119	622	1,601
British Columbia	6								—	—			
Totals	63	3,429	6,936	15,161	837	36,360	74,323	37,987	9	47	5,031	24,039	39,594

See Table 2 and footnotes following Table 3 A.

TABLE 1 B. Principal Statistics classified by Size Groups based on Shipments of Goods of Own Manufacture, 1961 and 1962
Basis: Revised Standard Industrial Classification and New Establishment Concept²

Size group	Estab- lish- ments	Manufacturing activity							Total activity				
		Production and related workers ⁴			Cost of fuel and elec- tricity ⁵	Cost of materials and supplies used ⁴	Value of shipments of goods of own manu- facture ⁴	Value added ⁴	Working owners and partners ⁶		Total employees ⁷		Total value added ⁸
		Number	Man- hours paid	Wages					Number	With- drawals	Number	Salaries and wages	
1961	No.		'000			\$'000				\$'000		\$'000	
Under \$10,000	5	5	10	18	1	13	78	62	3	16	10	31	69
\$ 10,000 to \$ 24,999													
25,000 " 49,999													
50,000 " 99,999		10	55	111	216	17	222	702	456	6	73	290	508
100,000 " 199,999		9	109	238	443	29	589	1,432	828	3	139	571	822
200,000 " 499,999	19	437	941	1,847	115	3,265	6,526	3,209	—	—	556	2,555	3,457
500,000 " 999,999	8	308	691	1,364	96	2,954	6,253	3,139	—	—	432	2,124	3,359
1,000,000 " 4,999,999	17	2,219	4,649	8,952	543	29,034	54,021	23,654	—	—	3,499	15,606	23,863
5,000,000 and over													
Head offices, sales offices and auxiliary units	...	...	...	...	...	...	...	...	...	...	...	...	...
Totals	68	3,133	6,640	12,839	801	36,078	69,011	31,349	12	51	4,709	21,178	32,079
1962													
Under \$10,000	3	7	16	31	1	43	99	56	2	9	10	42	56
\$ 10,000 to \$ 24,999													
25,000 " 49,999													
50,000 " 99,999		5	25	53	106	10	150	363	204	3	34	132	214
100,000 " 199,999		11	116	245	450	33	706	1,577	802	2	180	655	816
200,000 " 499,999	17	340	731	1,365	93	2,801	5,746	2,831	2	9	428	1,913	2,912
500,000 " 999,999	8	260	579	1,204	65	2,712	5,718	2,940	—	—	339	1,714	2,920
1,000,000 " 4,999,999	16	1,371	2,957	5,761	400	15,484	31,962	16,188	—	—	1,962	9,058	17,320
5,000,000 and over	3	1,310	2,353	6,243	236	14,464	28,858	14,967	—	—	2,078	10,528	15,356
Head offices, sales offices and auxiliary units	...	...	...	...	...	...	...	...	...	...	...	...	...
Totals	63	3,429	6,936	15,161	837	36,360	74,323	37,987	9	47	5,031	24,039	39,594

See footnotes following Table 3 A.

TABLE 1 C. Principal Statistics classified by Size Groups based on Manufacturing Value Added, 1961 and 1962
Basis: Revised Standard Industrial Classification and New Establishment Concept²

Size group	Estab- lish- ments	Manufacturing activity							Total activity				
		Production and related workers ⁴			Cost of fuel and elec- tricity ⁵	Cost of materials and supplies used ⁴	Value of shipments of goods of own manu- facture ⁴	Value added ⁴	Working owners and partners ⁶		Total employees ⁷		Total value added ⁸
		Number	Man- hours paid	Wages					Number	With- drawals	Number	Salaries and wages	
1961	No.		'000			\$'000				\$'000		\$'000	
Under \$10,000	5	7	13	23	1	36	86	47	3	11	12	36	63
\$ 10,000 to \$ 24,999													
25,000 " 49,999		7	39	77	142	15	236	513	263	4	48	176	284
50,000 " 99,999		12	135	288	516	38	1,040	2,056	972	5	180	732	1,076
100,000 " 199,999		12	233	521	1,039	61	1,669	3,272	1,625	—	300	1,365	1,736
200,000 " 499,999	18	652	1,434	2,861	209	7,768	13,865	5,827	—	—	891	4,311	5,916
500,000 " 999,999	7	422	884	1,931	124	6,505	12,315	5,835	—	—	667	3,117	5,674
1,000,000 " 4,999,999	7	1,645	3,422	6,328	353	18,824	36,903	16,780	—	—	2,611	11,440	17,331
5,000,000 and over													
Head offices, sales offices and auxiliary units	...	...	...	...	...	...	...	...	...	...	...	...	...
Totals	68	3,133	6,640	12,839	801	36,078	69,011	31,349	12	51	4,709	21,178	32,079
1962													
Under \$10,000	8	32	70	135	13	203	478	253	5	26	49	198	270
\$ 10,000 to \$ 24,999													
25,000 " 49,999													
50,000 " 99,999		11	107	228	434	35	820	1,676	781	1	166	611	788
100,000 " 199,999		12	203	427	837	61	1,677	3,443	1,702	3	264	1,209	1,767
200,000 " 499,999	14	448	1,032	1,970	127	4,865	9,273	4,278	—	—	573	2,800	4,276
500,000 " 999,999	7	549	1,098	1,974	165	6,061	11,033	4,836	—	—	788	3,188	5,383
1,000,000 " 4,999,999	11	2,090	4,080	9,810	437	22,735	48,419	26,138	—	—	3,191	16,034	27,110
5,000,000 and over													
Head offices, sales offices and auxiliary units	...	...	...	...	...	...	...	...	...	...	...	...	...
Totals	63	3,429	6,936	15,161	837	36,360	74,323	37,987	9	47	5,031	24,039	39,594

See footnotes following Table 3 A.

TABLE 1 D. Principal Statistics classified by Size Groups based on Total Value Added, 1961 and 1962

Basis: Revised Standard Industrial Classification and New Establishment Concept²

Size group	Estab- lish- ments	Manufacturing activity							Total activity				
		Production and related workers ⁴			Cost of fuel and elec- tricity ³	Cost of materials and supplies used ⁴	Value of shipments of goods of own manu- facture ⁴	Value added ⁴	Working owners and partners ⁶		Total employees ⁷		Total value added ⁸
		Number	Man- hours paid	Wages					Number	With- drawals	Number	Salaries and wages	
	No.		'000			\$'000				\$'000		\$'000	
1961													
Under \$10,000	4	2	1	2	1	10	35	23	2	6	6	12	23
\$ 10,000 to \$ 24,999		31	67	125	14	247	501	241	5	25	38	146	266
25,000 " 49,999		124	250	472	32	863	1,837	926	5	20	166	678	959
50,000 " 99,999		263	595	1,114	68	1,902	3,699	1,774	—	—	335	1,461	1,831
100,000 " 199,999		646	1,420	2,868	209	7,727	13,720	5,767	—	—	886	4,324	5,995
200,000 " 499,999	7	422	884	1,931	124	6,505	12,315	5,835	—	—	667	3,117	5,674
500,000 " 999,999		1,645	3,422	6,328	353	18,824	36,903	16,780	—	—	2,611	11,440	17,331
1,000,000 " 4,999,999 .....		...	...	...	...	...	...	...	...	...	...	...	...
5,000,000 and over .....	...	...	...	...	...	...	...	...	...	...	...	...	...
Head offices, sales offices and auxiliary units .....	...	...	...	...	...	...	...	...	...	...	...	...	...
Totals	68	3,133	6,640	12,839	801	36,078	69,011	31,349	12	51	4,709	21,178	32,079
1962													
Under \$10,000	7	26	59	114	10	153	369	208	5	26	36	143	215
\$ 10,000 to \$ 24,999		113	239	455	38	870	1,785	827	1	8	179	666	842
25,000 " 49,999		169	357	702	48	1,527	3,105	1,526	3	14	222	1,030	1,557
50,000 " 99,999		530	1,201	2,343	194	5,985	11,208	4,954	—	—	698	3,415	4,974
100,000 " 199,999		279	607	1,192	72	4,223	7,726	3,478	—	—	428	1,992	3,726
200,000 " 499,999	12	2,312	4,473	10,354	475	23,603	50,130	26,995	—	—	3,468	16,794	28,278
500,000 " 999,999 .....		...	...	...	...	...	...	...	...	...	...	...	...
1,000,000 " 4,999,999 .....		...	...	...	...	...	...	...	...	...	...	...	...
5,000,000 and over .....	...	...	...	...	...	...	...	...	...	...	...	...	...
Head offices, sales offices and auxiliary units .....	...	...	...	...	...	...	...	...	...	...	...	...	...
Totals	63	3,429	6,936	15,161	837	36,360	74,323	37,987	9	47	5,031	24,039	39,594

See footnotes following Table 3 A.

TABLE 1 E. Principal Statistics classified by Size Groups based on Total Employed,¹¹ 1961 and 1962

Basis: Revised Standard Industrial Classification and New Establishment Concept²

Size group	Estab- lish- ments	Manufacturing activity							Total activity				
		Production and related workers ⁴			Cost of fuel and elec- tricity ³	Cost of materials and supplies used ⁴	Value of shipments of goods of own manu- facture ⁴	Value added ⁴	Working owners and partners ⁶		Total employees ⁷		Total value added ⁸
		Number	Man- hours paid	Wages					Number	With- drawals	Number	Salaries and wages	
	No.		'000			\$'000				\$'000		\$'000	
1961													
Under 5 employees	5	4	5	8	4	33	94	57	4	14	8	18	57
5- 14 employees	15	93	217	418	35	623	1,641	975	8	37	123	541	1,018
15- 49 "	27	619	1,326	2,592	148	5,317	10,871	5,564	—	—	796	3,580	5,452
50- 99 "	11	527	1,178	2,388	185	7,992	13,538	5,359	—	—	746	3,653	5,530
100- 199 "	5	491	1,035	2,214	131	5,189	10,455	5,021	—	—	738	3,493	5,086
200-499 "	5	1,399	2,880	5,220	297	16,924	32,412	14,373	—	—	2,298	9,693	14,937
500 employees and over .....		...	...	...	...	...	...	...	...	...	...	...	...
Head offices, sales offices and auxiliary units .....		...	...	...	...	...	...	...	...	...	...	...	...
Totals	68	3,133	6,640	12,839	801	36,078	69,011	31,349	12	51	4,709	21,178	32,079
1962													
Under 5 employees	20	137	309	607	47	1,248	2,603	1,299	8	42	190	846	1,332
5- 14 employees	24	610	1,300	2,498	168	5,480	11,104	5,394	1	5	795	3,536	5,446
15- 49 "	8	379	889	1,810	149	7,111	13,425	6,063	—	—	755	2,882	6,117
50- 99 "	6	603	1,296	2,797	155	5,335	12,930	7,459	—	—	862	4,240	8,195
100-199 "	5	1,700	3,143	7,449	318	17,186	34,262	17,773	—	—	2,609	12,535	18,505
200-499 " .....		...	...	...	...	...	...	...	...	...	...	...	...
500 employees and over .....		...	...	...	...	...	...	...	...	...	...	...	...
Head offices, sales offices and auxiliary units .....	...	...	...	...	...	...	...	...	...	...	...	...	...
Totals	63	3,429	6,936	15,161	837	36,360	74,323	37,987	9	47	5,031	24,039	39,594

See footnotes following Table 3 A.

TABLE 1 F. Principal Statistics classified by Type of Organization, 1961 and 1962

Basis: Revised Standard Industrial Classification and New Establishment Concept²

Type of organization	Establishments	Manufacturing activity							Total activity				
		Production and related workers ⁴			Cost of fuel and electricity ⁵	Cost of materials and supplies used ⁴	Value of shipments of goods of own manufacture ⁴	Value added ⁴	Working owners and partners ⁴		Total employees ⁴		Total value added ⁴
		Number	Man-hours paid	Wages					Number	Withdrawals	Number	Salaries and wages	
	No.		'000			\$'000				\$'000		\$'000	
1961													
Individual ownerships.....	6	31	61	109	4	117	306	186	5	24	36	128	209
Partnerships.....	4	27	65	117	10	182	463	270	7	27	32	135	270
Incorporated companies.....	58	3,075	6,514	12,613	787	35,780	68,243	30,892	—	—	4,641	20,914	31,600
Cooperatives.....	—	—	—	—	—	—	—	—	—	—	—	—	—
Head offices, sales offices and auxiliary units.....	...	...	...	...	...	...	...	...	...	...	...	...	...
Totals.....	68	3,133	6,640	12,839	801	36,078	69,011	31,349	12	51	4,709	21,178	32,079
1962													
Individual ownerships.....	7	54	127	221	12	308	712	395	9	47	64	260	401
Partnerships.....	56	3,375	6,809	14,940	825	36,052	73,612	37,592	—	—	4,967	23,780	39,193
Incorporated companies.....	—	—	—	—	—	—	—	—	—	—	—	—	—
Cooperatives.....	...	...	...	...	...	...	...	...	...	...	...	...	...
Head offices, sales offices and auxiliary units.....	...	...	...	...	...	...	...	...	...	...	...	...	...
Totals.....	63	3,429	6,936	15,161	837	36,360	74,323	37,987	9	47	5,031	24,039	39,594

See footnotes following Table 3 A.

TABLE 2. Industry Outputs, Inputs and Value Added, 1961 and 1962

Basis: Revised Standard Industrial Classification and New Establishment Concept²

Item	1961	1962
	\$'000	
Manufacturing activity:		
Value of shipments—Goods of own manufacture.....	69,011	74,323
Add: Closing inventory—Goods in process.....	6,706	7,340
Finished goods.....	2,315	2,162
Deduct: Opening inventory—Goods in process.....	7,855	6,424
Finished goods.....	1,949	2,216
Gross output—Manufacturing activity.....	68,228	75,185
Deduct: Cost of materials and supplies used in manufacturing activity.....	36,078	36,360
Cost of fuel and electricity used.....	801	837
Value added—Manufacturing activity.....	31,349	37,987
Non-manufacturing activities:		
Value of shipments—Goods not of own manufacture.....	..	7,639
Add: All other revenue.....	..	348
Closing inventory—Goods purchased for resale.....	633	1,025
Deduct: Purchases of goods for resale as such.....	..	6,511
Opening inventory—Goods not of own manufacture.....	899	552
Cost of all other materials and supplies used.....	..	343
Value added—Non-manufacturing activities.....	730	1,606
Total value added.....	32,079	39,594

See footnote following Table 3 A.

TABLE 3. Employment and Payroll, 1961 and 1962

Basis: Revised Standard Industrial Classification and New Establishment Concept²

Year and province	Employees										Salaries and wages				
	Production and related workers				Admin- trative and office ^{6,9}		Sales, and distribution ⁹		Total employees ^{7,9}		Production and related workers		Admin- istrative and office	Sales, and distrib- ution	Total salaries and wages
	Manufacturing ⁴		Other ⁵												
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Manufacturing	Other			
1961	number										\$'000				
Nova Scotia	1,181	14	..	..	..	..	..	..	1,450	69	4,195	..	..	..	5,783
Quebec	1,518	12	..	..	..	..	..	..	2,308	186	6,567	..	..	..	11,930
Ontario	301	2	..	..	..	..	..	..	519	36	1,554	..	..	..	2,730
Manitoba	105	—	..	..	..	..	..	..	134	7	523	..	..	..	735
Saskatchewan															
Alberta															
British Columbia															
Totals	3,105	28	..	..	..	..	..	..	4,411	298	12,839	..	..	..	21,178
1962															
Nova Scotia	1,345	—	8	—	401	32	74	6	1,828	38	5,614	16	2,443	448	8,521
Quebec	1,678	12	28	—	568	180	59	6	1,333	198	7,651	80	4,270	506	12,507
Ontario	300	2	—	—	144	30	35	4	479	36	1,453	—	686	249	2,389
Manitoba	92	—	—	—	22	5	—	—	114	5	443	—	180	—	622
Saskatchewan															
Alberta															
British Columbia															
Totals	3,415	14	36	—	1,135	247	168	16	4,754	277	15,161	96	7,579	1,203	24,039

See footnotes following Table 3 A.

TABLE 3A. Production and Related Workers,⁴— Manufacturing Activity, by Months, 1962

Basis: Revised Standard Industrial Classification and New Establishment Concept²

Month	Establishments reporting monthly detail	
	Male	Female
	number	
January	2,814	13
February	2,760	13
March	2,813	13
April	2,935	13
May	2,938	14
June	3,062	15
July	3,222	17
August	3,305	17
September	3,319	13
October	3,290	13
November	3,218	13
December	3,077	14
Average for establishments reporting monthly detail (collected only for large establishments)	3,064	14
Average for small establishments (only annual averages collected)	351	—
Average for all establishments	3,415	14

¹ See Table 2 and Explanatory Notes concerning manufacturing and non-manufacturing activities.

² See Explanatory Notes.

³ This category, in this table only, includes working owners and partners. Since administrative and office employees are engaged in a variety of activities they have been excluded from manufacturing activity beginning with the revised 1961 series shown in the following tables. They are included here for purposes of comparison with the tabulations of previous years.

⁴ Conceptually identical to previous years. See Explanatory Notes.

⁵ Cannot be reported separately for manufacturing and non-manufacturing activities but related substantially to manufacturing activity. Identical concept to previous years.

⁶ Working owners and partners were included with administrative and office employees in the "Manufacturing series" published in former years. See Explanatory Notes.

⁷ Includes production and related workers, administrative and office employees, sales distribution and other employees. See Explanatory Notes for the treatment of head office employees and those employed in auxiliary units.

⁸ Value of total shipments and other operational revenue less total cost of materials, supplies, fuels used and purchases of products and materials for resale in the same condition; all adjusted for inventory changes where required. See Table 2 and Explanatory Notes.

⁹ Sales and distribution workers and production workers (non-manufacturing) are included for the first time as a result of the full implementation of the new definition of the establishment. The figures for production workers (non-manufacturing), administrative and office employees and sales and distribution workers are not yet available for 1961 but form part of total employees. Sales and distribution workers may include some employees that are reported as part of a manufacturing establishment but are not working at the establishment's location. Head offices, sales offices, etc., which report separately are included in the figures for the province in which they are located.

¹⁰ Confidential data.

¹¹ Includes paid employees, working owners but excludes unpaid family workers.

Note: Figures may not add due to rounding.

TABLE 4. Materials and supplies Used in Manufacturing Activity, 1962
Basis: Revised Standard Industrial Classification and New Establishment Concept¹

Description	Quantity	Cost
		\$'000
1. Materials used:		
Castings (rough and semi-finished) received from foundry:		
Iron (gray and malleable)	ton 828	270
Steel.....	" 497	303
Pig iron	" 869	43
Steel (except alloy):		
Bars	" 4,637	768
Sheets:		
Plain	" 13,254	1,936
Galvanized	" 2,936	423
Plates	" 41,580	6,320
Structural shapes	" 5,558	975
Wire	" 13	3
Alloy steel:		
Stainless:		
Billets, bars and rods .....	... ..	95
Other .....	... ..	1,631
Other alloy steel .....	... ..	183
Scrap iron and steel:		
Purchased	ton 614	27
Own make	" 475	...
Other iron and steel.....	... ..	716
Ferro-alloys .....	... ..	29
Non-ferrous metals, including scrap:		
Aluminum:		
Castings	pound 25,253	22
Sheet	" 37,691	21
Other forms	" 60,505	35
Brass and bronze	" 118,984	79
Copper:		
Sheet	" 157,530	111
Other forms	" 43,480	19
Nickel	" 5,666	5
Lead	" 4,050	1
Tin	" 60	--
Zinc	" 3,102	1
Babbitt metals and solders.....	" 10,920	6
Other non-ferrous metals.....	... ..	82
Other materials:		
Iron and steel pipe and fittings .....	... ..	5,185
Paints, oils and varnished .....	... ..	153
Foundry coke	ton 418	16
Foundry sands	" 1,432	16
Plumbago and graphite	pound 1,330	--
Lumber.....	M ft. b.m. 805	69
Fireclay.....	ton 45	1
Cupola blocks and firebrick .....	... ..	85
Core oil	Imp. gal. 1,070	2
All other materials and components used ² .....	... ..	14,784
2. Containers and other packaging materials and supplies used.....		75
3. Operating, maintenance and repair supplies used (excluding fuel).....		874
4. Amount paid out to others for work done on materials owned by establishments.....		993
Total		36,360

¹ See Explanatory Notes.

² No detailed information on materials used was collected from small establishments, the estimated costs for which are included here. In 1962 these estimated costs were \$2,643,000.

TABLE 5. Fuel and Electricity Used¹ in Manufacturing Activity,² 1962
Basis: Revised Standard Industrial Classification and New Establishment Concept³

Description	Quantity	Cost
		\$'000
1. Large establishments which reported commodity detail:		
Bituminous coal:		
(a) From Canadian mines	ton 571	9
(b) Imported	" 7,609	86
Sub-bituminous coal (from Alberta mines only)	—	—
Anthracite coal	—	—
Lignite coal	—	—
Coke	ton 16	—
Gasoline (including gasoline used in cars and trucks)	Imp. gal. 507,176	199
Fuel oil including kerosene or coal oil	" 969,598	136
Wood	—	—
Gas:		
(a) Liquefied petroleum gases	Imp. gal. 59,818	10
(b) Other manufactured gas	—	—
(c) Natural gas	M cu.ft. 55,322	34
Other fuel	—	—
Electricity purchased	kwh. 17,791,095	261
Steam purchased .....	...	2
2. Estimate for small establishments for which no data were collected:		
Fuel and electricity .....	...	100
3. All establishments:		
Total fuel and electricity used .....	...	837

¹ Does not include fuel and electricity produced for own use.

² Includes only fuel and electricity purchased. Conceptually identical to previous years in that it also includes relatively small amounts used in non-manufacturing activities since these cannot be reported separately.

³ See Explanatory Notes.

TABLE 6. Shipments of Goods of Own Manufacture, 1962
Basis: Revised Standard Industrial Classification and New Establishment Concept¹

Description	Quantity	Value
		\$'000
1. Products:		
Heating boilers:		
Cast iron sectional heating boilers	No. 3	3
Steel heating boilers	No. 3,019	3,893
Power boilers, parts and equipment .....	...	23,973
Tanks (complete at factory) and cylinders:		
Pressure and vacuum tanks:		
Liquefied petroleum gas tanks	No. 6,585	2,495
Other pressure and vacuum tanks .....	...	3,810
Storage and processing tanks:		
Bulk storage (including above ground, etc.) .....	...	3,554
Basement oil storage tanks	No. 22,059	637
Other storage and processing tanks .....	...	3,783
Septic tanks, metal	No. 4,931	215
Other tanks .....	...	670
Tank bodies for trucks	No. 95	446
Fabricated products:		
Steel plate (cut, punched, etc.) .....	...	2,305
Structural shapes (cut, punched, etc.) .....	...	1,744
Miscellaneous steel plate work:		
Bins and hoppers .....	...	665
Smokestacks .....	...	180
Smoke breeching .....	...	432
Riveted and welded steel pipe:		
Stainless steel	ton 759	1,430
Other steel	" 672	588
Other plate work .....	...	2,436
Machinery and parts .....	...	3,184
Stokers, mechanical and parts .....	...	223
All other products .....	...	13,767
2. Amount received in payment for work done on materials and products owned by others		1,650
Less adjustment for value of sales taxes, excise duties and outward transportation charges which could not be deducted from individual commodity items described above		(293)
Net adjustment for establishments receiving progress payments ²		2,537
Total adjusted value of shipments and work done		74,323

¹ See Explanatory Notes.

² See footnote 1, Table 7.

³ Confidential data. Included with "All other products".

TABLE 7. Industry Inventories, 1962¹

Basis: Revised Standard Industrial Classification and New Establishment Concept²

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: ³							
Nova Scotia	}	2,451	1,379	656	4,486	102	4,588
Quebec							
Ontario	}	3,082	4,774	850	8,706	6	8,712
Manitoba							
Saskatchewan	}	1,461	248	677	2,386	444	2,830
Alberta							
British Columbia		264	23	33	320	—	320
Totals ⁴		7,258	6,424	2,216	15,898	552	16,450
Closing:							
Nova Scotia	}	2,427	2,954	786	6,167	233	6,400
Quebec							
Ontario	}	2,892	4,182	1,001	8,075	4	8,079
Manitoba							
Saskatchewan	}	1,225	174	348	1,747	788	2,535
Alberta							
British Columbia		217	30	26	273	—	273
Totals ⁴		6,762	7,340	2,162	16,264	1,025	17,289

¹ Values represent book values of inventories 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.

² See Explanatory Notes.

³ The opening inventories may differ from the closing inventories for the previous survey 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.

⁴ Figures may not add due to rounding.

TABLE 8. Shipments of Goods of Own Manufacture — All Industries, 1961¹ and 1962¹

Description	1961		1962	
	Quantity	Value	Quantity	Value
		\$'000		\$'000
Heating boilers:				
Cast iron sectional heating boilers:				
(a) Under 775 sq. ft. No.	4,679	1,083	5,106	1,113
(b) 776-1,499 sq. ft. "	1,700	811	2,043	857
(c) 1,500 sq. ft. and over..... "	1,128	1,321	1,687	1,817
Steel heating boilers:				
(a) Under 112 sq. ft. "	5,767	1,738	5,380	1,510
(b) 112-522 sq. ft. "	991	2,537	866	2,288
(c) 523-1,245 sq. ft. "	636	1,472	559	1,860
(d) 1,246 sq. ft. and over..... "	39	295	103	714
Power boilers:				
Marine type	102	1,221	53	914
Water tube package boiler units	144	1,575	114	2,846
Fire tube package boiler units	1,117	4,012	1,329	4,883
Fire tube boilers	70	527	—	2
Boilers, other, type not specified	184	18,129	160	16,280
Totals	16,557	34,722	17,400	35,082

¹ Includes shipments from other industries which manufacture, as a secondary activity, the commodities listed above.

² Confidential. Included with "Boilers, other".

TABLE 9. Capital and Repair Expenditures, 1960-62

Year	Capital expenditures			Repair expenditures			Total capital and repair expenditures		
	Construction	Machinery and equipment	Sub-total	Construction	Machinery and equipment	Sub-total	Construction	Machinery and equipment	Total
\$'000									
1960	533	860	1,393	200	888	1,088	733	1,748	2,481
1961	201	787	988	182	770	952	383	1,557	1,940
1962	473	995	1,468	204	789	993	677	1,784	2,461

Source: Business Finance Division. — DBS.

List of Establishments, 1962

Name	Location
Nova Scotia:	
Matheson, I. & Co. Ltd.	New Glasgow
Steel and Engine Products Ltd.	Liverpool
Quebec:	
Acme Welding and Service Co. Ltd.	Ville La Salle
Boilers Incorporated	Montreal
Canadian Erectors Mfg. Ltd.	Montreal
Combustion Engineering-Superheater Ltd.	Sherbrooke
Douglas Bros. Ltd.	St. Laurent
Drummond Welding & Steel Works Ltd.	Ville Jacques Cartier
Ferro Metal Ltd.	Montreal
Latulippe, Michel, Engr.	Quebec
Plate Works Ltd.	Montreal
Stemac Ltd.	Lachine
Vidal, H.C., Engr.	Montreal
Volcano Limited	St. Hyacinthe
Weir, J. & R., Limited	Montreal
Ontario:	
Allen Tank & Welding Co. Ltd.	London
Aurora Tank & Welding	Aurora
Babcock-Wilcox & Goldie-McCulloch, Ltd.	Galt
Bell, Robert, Industries Ltd.	Seaforth
Bingley Steel Works Ltd.	Corwall
Brantford Welding & Boiler Limited	Brantford
Campbell Steel & Iron Works, Limited	Ottawa
Chemical Equipment Fabricators	Scarborough
Clark Kennedy & Co. Limited	Toronto 9
Cleaver-Brooks of Canada Ltd.	Stratford
Cochran, W., Co., Ltd.	Paris
Courtland Welding Service Limited	Courtland
Dahmer Sheet Metals Limited	Kitchener
Diamalloy Manufacturing Co., Limited	Toronto 13
Domestic Tank & Equipment Ltd.	Scarborough
Essex Boiler Heating & Engineering Co.	Windsor
Foster Wheeler, Limited	St. Catharines
Hamilton Boiler Works	Hamilton
Hassan Steel Fabricators Limited	London
Huron Canadian Fabricators Ltd.	Seaforth
Lloyd & Westwood Machinery Company	Toronto
Lock, J.H., & Sons Ltd.	Toronto 9
MacPherson, C.E. Limited	Kingston
Oakwood Iron Works Limited	Toronto 15
O'Connor Fuel Tanks Ltd.	Toronto 16
Pendell Boiler, Limited	Toronto 4
Pfaudler Permutit Canada Ltd.	Toronto 2
Plate & Structural Steel Ltd.	Toronto 3
Port Colborne Iron Works, Limited	Port Colborne
Steel Fabricating & Welding, Limited	Dundas
Wilson Engineering & Fabricating, Ltd.	Winona
Woodstock Boiler Works	Woodstock
Manitoba:	
Canadian Brown Steel Tank Co. Ltd.	Brandon
Saskatchewan:	
The Saskatoon Boiler Manufacturing Co. Limited	Saskatoon
Alberta:	
Black-Sivalis & Bryson, Ltd.	Edmonton
Calgary Steel Tank, Limited	Calgary
Johnson Welding & Machine Shop Ltd.	Lloydminster
Liberty Boilers (Lethbridge) Ltd.	Lethbridge
Maloney-Crawford Tank & Service Co. Ltd.	Calgary
Reliance Welding Works	Edmonton
Steel Crafts, (Alberta) Ltd.	Calgary
T.I.W. Western Limited	Edmonton
Universal Industries Ltd.	Lloydminster
British Columbia:	
Lochead-Haggarty Eng. & Mfg. Co. Ltd.	Burnaby 2
Patterson Boiler Works, Limited	Vancouver
Steelweld Limited	Vancouver 4
Welding Shop & Engineering Co. Ltd.	Vancouver 4
Western Welding Works Ltd.	Vancouver 4
Westminster Boiler & Tank Company	New Westminster

EXPLANATORY NOTES

This report is one in a series of about 140 publications which present the results of the 1962 Census of Manufactures. Most reports in this series refer to specific industries, but there are summary reports for Canada and the provinces and special reports on geographical distribution and on type of ownership and size of establishments.

With the publication of the results of the 1962 Census of Manufactures, the Bureau has completed a major revision in the classification and concept of its annual census of manufacturing establishments. Because of its size and complexity, this project had to be carried out in three stages. The first stage was the change in classification and the results of the 1960 Census, together with the re-compilation of the 1957, 1958 and 1959 Censuses were published in the 1960 reports on the basis of the revised Standard Industrial Classification. This part of the project was confined entirely to a re-coding of existing reporting units. The second stage consisted of the implementation of the new definition of the reporting unit i.e. "establishment" as it applied to **manufacturing activities** of manufacturing establishments (See following note on "Establishment"). Results of the 1961 Census reflected this change in concept and, in order to provide comparability of data for recent years, the 1961 reports contained principal statistics on the basis of the new establishment definition for years back to 1957.

The third stage which was the extension of the definition of the establishment to cover **total activities** of manufacturing establishments is reflected in the statistics for 1961 and 1962 contained in this report. This full implementation of the new definition of the establishment has resulted in an extension of the data to non-manufacturing activities of manufacturing establishments and in additional changes in the 1961 statistics of manufacturing activities. Statistics on manufacturing activities will continue to be shown separately as in the past but, beginning with 1961, data on all operations (total activity) of manufacturing establishments will also be given. By definition "total activity" relates to all operational data and excludes such non-operational items as rent, interest and dividends. In addition, statistics on man-hours paid will be included as part of the regular series of industry statistics. For many industries, adjustments and revisions were made to the 1961 data on **manufacturing activities** which were published during the second stage to bring them in line with reporting procedures followed in the 1962 Census and to reflect the final application of the new concept. The 1961 statistics on manufacturing activities contained in this report are thus not entirely comparable with those published in the 1961 reports. However, the 1961 statistics are shown in this publication in both their original and revised forms in order to provide a link with the immediate past. A more complete account of recent changes and additions and brief descriptions of the principal industry statistics are given in following sections of these notes.

Standard Industrial Classification

The revised Standard Industrial Classification which was introduced with the 1960 Census of Manufactures and applied to the results of the 1957, 1958 and 1959 censuses provides for a breakdown of the manufacturing universe into 140 industries arranged in 20 major groups. Custom Tailoring Shops is the only industry class in the Manufacturing Industries Division of the classification which is not covered in the annual Census of Manufactures. It is surveyed as part of the Decennial Census of Merchandising and Service Establishments. Of the 140 "three-digit" industry classes in the Manufacturing Industries Division, 21 are further broken down into 67 "four-digit" sub-classes. With the exception of the Wood Preservation and Sound Recording industries, the figures for which are at present confidential and have to be included with those of related industries, the statistics for all of the "four-digit" sub-classes are published regularly. Thus, at the Canada level, principal statistics are compiled for 183 industries. These cannot all be published separately by province because of the confidential nature of the data in certain provinces.

Reporting establishments are classified or allotted to specific industries in the classification system on the basis of the value of principal products made or shipped. In general, establishments primarily engaged in repair work (Shoe Repair Shops, Motor Vehicle Repair Shops etc.) are not included in manufacturing industries. Exceptions are establishments primarily engaged in furniture, ship, boat, aircraft and railroad rolling stock repairs which are classified to the manufacturing industries producing the products involved. Establishments primarily engaged in assembling parts into complete units have always been included in manufacturing industries.

Full details concerning the revised classification system are contained in the Standard Industrial Classification Manual, Catalogue No. 12-501, which is available from either the Queen's Printer or the Dominion Bureau of Statistics.

It should be noted that two new industries (Poultry Processors and Dental Laboratories) and three new groups of establishments (book publishers in the Publishing Industry, electro-plating establishments in the Metal Stamping, Pressing and Coating Industry and prescription branches in the Ophthalmic Goods Manufacturers Industry) have been included in the 1961 (revised) and 1962 Census statistics and will continue to be included thereafter. They were surveyed for the first time in the 1960 Census (1961 Census in the case of prescription branches) in line with the revised classification but, since they did not represent new production, they were removed from the 1960 and 1961 compilations published in the 1961 Census reports in order to provide complete comparability of data over the period 1957-61. Statistics for this period are repeated in the 1962 reports to supply a link with the revised 1961 data and the new 1962 statistics.

Establishment

The reporting unit in the Census of Manufactures is the **establishment**. The majority of establishments are firms, but many firms have more than one manufacturing establishment. Such firms are requested to submit a separate Census of Manufactures report for each manufacturing establishment which can meet the reporting requirements described below.

Beginning with the 1961 Census of Manufactures the establishment is defined as follows:

"The smallest unit which is a separate operating entity capable of reporting all 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,
Inventories,
Shipments or sales."

Following is a description of the main features of the new establishment concept introduced in the 1961 Census, how they differ from those of the old "activity" concept and the steps taken to correct for breaks in continuity.

(a) The establishment is to be distinguished from smaller subdivisions or departments which do not have records that permit them to report all items required of an establishment. Prior to 1961, some establishments were required to submit two or more separate reports when they were engaged in activities which were classifiable to different industries. Beginning with 1961, separate reports for such activities are required only in cases where accounting records can provide the necessary input and output elements of principal statistics. Special reporting arrangements were made with respondents when the acceptance of combined reports would have seriously affected the statistics for particular industries or areas. Where continuity of industry statistics was affected by this change in reporting procedures, adjustments to the data were made back to 1957 in order to maintain comparability of the series for recent years.¹

(b) A manufacturing establishment is typically a factory, mill or plant principally engaged in manufacturing activities. Prior to 1961, the Census of Manufactures attempted to cover the manufacturing activities of all establishments, whether or not they were primarily engaged in manufacturing. Beginning with the 1961 Census, establishments (accounting entities) which are not primarily engaged in manufacturing are no longer included as manufacturing establishments in the basic industry statistics.¹

Again, adjustments were made to reflect the removal of such reporting units for the period 1957-60. These reporting units are now listed as establishments in other Bureau surveys, such as Wholesale Trade, Construction etc. This has resulted in a somewhat smaller universe represented by the Census of Manufactures. In terms of overall 1960 Census results, the number of establishments transferred to other industries totalled 2,786 or 8% but these represented only 0.7% of total employment and of total value of shipments of manufactured products. In order, however, to maintain complete coverage of certain commodity items produced mainly in manufacturing establishments, many non-manufacturing establishments are now surveyed by the Industry Division for commodity shipments only and the latter are included in those tables of industry reports showing shipments of certain commodities "from all industries".

(c) A manufacturing establishment may be, and often is, engaged in other activities in addition to its principal manufacturing activity. Prior to 1961 the main emphasis in the Census of Manufactures was on manufacturing activity. Beginning with 1961, each establishment reports on all the activities carried out within its accounting boundaries (except income from investments such as rent, interest and dividends) and data on different activities (manufacturing, trading in goods not of own manufacture, construction by own labour force, revenue from services etc.) are requested separately. However, the statistics published in the 1961 reports were confined to manufacturing activity only in order to maintain comparability with previous years and to permit a more thorough audit of the new data. The 1962 reports contain principal statistics on total activities of manufacturing establishments for 1961 and 1962 with the main elements of manufacturing activity shown separately as in the past. It should be noted that the statistics for separate activities are not completely consistent. Some respondents cannot distinguish in their records materials, shipments and inventories relating to own manufacturing activities from those relating to goods not of their own manufacture or to other activities and can report operational data in total only under manufacturing activity. This situation has always existed, however, and is not considered important enough to invalidate the use of the data in the measurement of manufacturing as an "activity". The values assigned by the respondent to materials and shipments of own manufactured goods include costs in varying degrees that relate to internal (to the establishment) transportation, warehousing and selling activities, but it is not possible to make adjustments to arrive at a uniform valuation for manufacturing activity only; although valuation at the establishment "boundary" must be accepted, the items valued under manufacturing activities still relate, in most cases, to "goods of own manufacture". In the case of employment only data on manufacturing production workers and manufacturing man-hours can be assigned, in total, to manufacturing activity; administrative and office employees can seldom be allocated to separate activities.

¹ Most of these adjustments were made when the results of the 1961 Census were being compiled. Since publication of these results in the 1961 reports additional adjustments were made to the 1961 data, as noted earlier, and these are reflected, where applicable, in the revised 1961 statistics contained in this report.

Complete consistency, therefore, can be obtained only at the "all operations" (total activity) level, and for studies or statistical measures requiring accurate co-ordinated data, the "total" statistics should be used.

(d) Additional changes resulted from intensive editing and follow-up consistent with the introduction of the new concept. An example of such changes is the provision for the elimination, in total, of sales taxes and outward transportation charges from value of shipments. Prior to 1961, although the value of shipments for each product was requested excluding taxes and transportation charges, no allowance had been made for the reporting of these items in total when the respondents' records did not permit their deduction from the values of the individual products. Another example is a change in the valuation of shipments where, prior to 1961, a manufacturing company operating warehouses or sales outlets was reporting value of shipments in terms of an estimated manufacturer's price in accordance with the old activity concept, even though his records were not kept on this basis. Since the accounting boundary in such cases extends to distribution operations, the respondent was instructed in 1961 to report shipments at the final selling price in order to obtain more realistic and accurate data.² Adjustments were made to the value of shipments for the period 1957-60 to reflect such changes and maintain continuity of the shipments data. Since no actual data to make these corrections were available for back years, 1961 adjustment ratios were applied to the previous years for each industry affected, on the assumption that the valuation changes in 1961 applied in equal proportions to the preceding period.³

(e) The new concept also demands that inventories held apart from plant be included with plant inventories if establishment boundaries extend to warehouses and sales outlets. Prior to 1961, compilations took into account only the inventories held at plant. In this case, however, most of the missing data were available from supplementary questions in the Annual Census and from the Monthly Inventories and Shipments Survey and actual corrections could be made for previous years.

² Some manufacturing firms operate sales branches or selling warehouses as separate sales establishments for which complete accounting records of receipts, expenses, employment and sales are maintained. In such cases the plants, in effect, "sell" to the sales outlets on much the same basis as they would to independent buyers. The value of plant shipments is based on factory prices and the "boundary" of the manufacturing establishment does not extend beyond the plant. The sales outlets in such cases constitute separate sales establishments and are classified to wholesale or retail trade. Some sales outlets of manufacturing firms, although they physically handle products of the plants, do not maintain separate accounts and are generally treated for statistical purposes as extensions of manufacturing operations. Special arrangements were made for separate reporting in a few cases where the treatment of such outlets as manufacturing extensions would seriously affect the significance of statistics for particular manufacturing and trade industries.

³ See footnote 1.

(f) Prior to 1961 the Census of Manufactures did not have complete coverage of head and administrative offices and had never surveyed separate sales offices, warehouses or laboratories operated by manufacturing firms. Beginning with the 1961 survey, complete coverage of these auxiliary units was effected. In the past the employment and salaries and wages of those head and administrative offices that were surveyed were either coded in total to the industry in which the greatest portion of the company's manufacturing activities was classified or else, in the case of certain large multi-unit firms with establishments in several industries, were pro-rated among the different industries involved. In the original 1961 statistics published in 1961 reports, the same coverage and treatment of head offices was applied to maintain comparability over the 1957-61 period. Beginning with the revised 1961 statistics, all head offices and auxiliary units are covered and are processed according to the methods described below.

1. Single-Establishment Companies

In the great majority of cases central administrative and executive personnel of companies consisting only of one establishment are generally located at the site of the manufacturing plant and are automatically included in the plant reports. Where head offices and auxiliary units are geographically separate from plant locations and employ a sizeable number of workers they are surveyed on special questionnaires.

Separately located head offices, sales offices, administrative offices and other separate auxiliary units (laboratories, warehouses, etc.) do not usually constitute separate establishments⁴ for purposes of industry statistics since they do not normally generate operational revenues but give rise only to costs of operation (mainly salaries and wages) which make up part of the selling price of manufactured products and which are thus included in the value of shipments or sales. Where such units belong to single-establishment companies, they will be considered as extensions of the establishment's boundaries and their operations consolidated with the establishment's total activity.

2. Multi-Establishment Companies

In the case of companies with more than one establishment the following rules are applied:

(i) Where all the establishments of a company are classified to the same (three-digit) industry, the head office and other auxiliary units are coded to that same industry.

(ii) Where the establishments of a company are not all classified to the same (three-digit) industry but are coded to different industries, or industries in different industry groups or even different divisions

⁴ See footnote 2 for exceptions.

of the Standard Industrial Classification, the inclusion of data for head office and auxiliary units in any one of the (three-digit) industries concerned would distort the relationship between items of principal statistics. In such cases, the auxiliary units are coded at the group (two-digit) level in tabulations of industry statistics. Where multi-establishment companies cut across group or major division lines of the Classification, the head office and auxiliary units will be coded to the (two-digit) industry group in which the major part of the company's operations are classified. Although this may result in some distortion of (two-digit) industry group statistics it will eliminate distortion within groups as it will leave statistics at the (three-digit) industry level free of these company-wide data.

Period Covered

Respondents are asked to submit figures for the calendar year, if at all possible, and most reports are on this basis. Financial year reports for periods differing from the calendar year are accepted in instances where respondents find it impossible to supply calendar year data from accounting records. However, the data on employees, salaries, wages and man-hours are requested on a calendar year basis in all cases.

When establishments are operated for only a portion of a year, a report is required covering the period of operation.

Working Owners or Partners

Beginning with the revised 1961 statistics working owners and partners of unincorporated businesses are shown as a separate category in the principal statistics and are neither included in the number of employees nor in 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. In all previous reports of the Census of Manufactures these workers were included as part of the number of administrative and office employees and their withdrawals were included as part of salaries. Withdrawals are defined as amounts withdrawn by owners or partners for normal living expenses, excluding withdrawals for payment of income tax.

Number of Establishments

The number of establishments represents the number of operating units (accounting entities as per the new definition of the establishment) for which separate reports are submitted. Head offices located apart from establishments and which are surveyed separately and separate sales and administrative auxiliaries that are treated as extensions of manufacturing activities are not included in the establishment count. However, the operational statistics (employment, salaries etc.) of such auxiliary units which are coded at the "three-digit"

level are included in the principal statistics of industries coded at the same level; those units coded at the "two-digit" level are included with the statistics for groups of industries.

Employees

As noted above, the number of working owners and partners are excluded from the number of employees, beginning with the revised 1961 statistics. This change brings the definition of "employees" in the Census of Manufactures in line with that of "employees" in the Bureau's monthly Employment Survey and with that of "paid workers" in the Bureau's Labour Force Survey. For purposes of historical comparisons, the number of working owners and partners should be added to total employees (beginning with the revised 1961 data) in order to correspond with the figure of "total employees" published in previous reports concerned with the Annual Census of Manufactures.

In addition to production and related workers engaged in manufacturing activities, total employees include administrative, office, sales and distribution workers as well as any production workers employed in non-manufacturing activities such as construction undertaken for the use of the establishment by its own employees (when these are treated as a separate work force) or logging (mostly in connection with sawmills or planing mills). Number of employees represents as closely as possible equivalent annual full-time employment. Adjustments are made when reported figures indicate the existence of part-time or seasonal employment.

Administrative and office employees include all executive and supervisory officials such as presidents, vice-presidents, controllers, secretaries, treasurers etc., together with managers, professional, technical and research employees, superintendents and factory supervisors above the working foreman level, and clerical staffs. Also included are employees in activities such as advertising, credit collections, purchasing, personnel, legal, medical etc. Sales and distribution workers include office personnel whose salaries are charged to selling expense, travelling salesmen, driver salesmen, truck drivers and their helpers, etc. They exclude persons working on a commission basis who are not considered regular employees.

Production and related workers in manufacturing activities include, in addition to those engaged in processing and assembling, those employed in storing, inspecting, handling, packing, warehousing, etc. They also include employees in related activities such as maintenance, repair, janitorial and watchman services. Working foremen doing similar work to that of employees they supervise are also included. Production workers employed in non-manufacturing activities such as construction undertaken for the use of the establishment, logging

employees or outside piece-workers employed in certain industries are excluded from the number of production and related workers but are part of the total number of employees in those industries.

Production and related workers 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 twelve. This procedure is followed even though the plant did not operate in all months in order to derive equivalent annual full-time employment. The numbers are somewhat affected by turn over, in that employment is overstated when an employee changes employment within the same industry during a pay period. Other categories of workers are reported in the form of annual averages. Figures on employment and man-hours refer to the calendar year whether or not some establishments report other data on a financial year basis.

Man-hours of production and related workers in manufacturing activities 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.

Salaries and Wages

Salaries and Wages refer to gross earnings of the employees described above, **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 workers' earnings. Payments for overtime are included.

Wages refer to amounts paid to production and related workers engaged in manufacturing operations as defined above. Salaries refer to amounts paid to all other categories of employees including relatively small numbers of production workers engaged in construction and extractive operations or who are employed as outside piece-workers. Figures on salaries and wages refer to the calendar year whether or not some establishments reported other data on a financial year basis.

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.

Materials and Supplies

(a) Used in 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. The statistics represent only commodity items or physical goods (costs 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. Respondents are required to report materials and supplies **used not purchased**. 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) Purchases for resale as such. Figures represent the 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.

(c) 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. Value of construction and repair work done by outside contractors is 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 medical supplies, laboratory supplies etc.

Shipments

In general the figures represent revenue from all production, sales, services and related activities of reporting establishments. Non-operating revenues such as rent, interest and dividends and the sale of used fixed assets are excluded.

(a) 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 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. (See notes on "Establishment").

Such shipments are net of returned goods, and value figures at the establishment exclude discounts, returns, allowances, sales taxes and excise duties, returnable containers, and charges for outward transportation by common or contract carriers. Transportation or delivery expenses incurred by the reporting establishments' own carriers are not deducted.

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 form B.13 "Customs Canada, Export Entry" has been completed, are treated as shipments.

In four industries, viz. Fabricated Structural Metal Industry, Aircraft and Parts Manufacturers, Railroad Rolling Stock Industry and Shipbuilding and Repair, where work on principal products extends over a relatively long period, the value of production, rather than the value of shipments, is recorded. For these industries value of production is computed from the value of deliveries of complete units during the year plus the value of work done during the year on unfinished units less the value of work done in previous years on units delivered in the year under review. Adjustments to the value of shipments are also made for firms in these industries and in some other industries which operate on the basis of progress payments. The latter are treated as sales and not as inventory, so that for firms which use a progress payments account, an adjustment to the value of shipments is made for the net change in this account during the year.

(b) Shipments of goods not of own manufacture

These figures represent the net selling value at the establishment (less discounts, returns, allowances, sales taxes and excise duties 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 goods on a rental basis value of shipments represents the book value of such goods. All sales of consignment goods from other countries are included.

(c) Other revenue

Figures represent the book value of fixed assets, if any, (new construction and machinery and equipment including major repairs and alterations, additions, modifications, installation and assembly work) produced during the year for the use of reporting establishments by the establishments' 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 establishments' own employees, such as revenue from goods produced for rental (the book value of such goods are included as part of factory shipments), servicing revenues, commissions on sales (when not included in value of sales), revenue from company-operated cafeterias and lunch counters and revenue from outside installation or construction work not related to the establishments' 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 inventory

Values represent the book value of manufacturing inventory owned in Canada. The value of inventory held for which progress payments have been received is treated as shipments and is not included in inventory owned. 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. Inventory owned abroad has already been reported as shipments and is excluded.

(b) Inventory of goods purchased for re-sale

Figures represent the book value of inventory of goods purchased for re-sale as such without further processing, owned by reporting establishments and held at the plants and at any warehouses or selling outlets which are treated as extensions of establishments. Inventory owned in transit in Canada or on consignment in Canada is included.

Because of changes in classification, the receipt of revised data, the inclusion of new establishments or the removal of old establishments which did not operate during the latest year, the opening inventory for the latest year does not necessarily coincide with the closing inventory of the preceding year.

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 total activities

Figures consist of value added by manufacturing activities plus value added by non-manufacturing activities and is compiled by deducting the cost 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, adjusted for changes in the value of inventories of goods purchased for re-sale.

"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 in 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.

Short Forms

Since 1949, in order to ease the reporting burden for smaller firms, a one-page short form has been used asking for only a limited amount of detail. For purposes of publication, missing data were estimated on the basis of appropriate ratios. Beginning with the 1959 census, the general limit for short forms was raised from \$50,000 (the limit used since 1949) to \$100,000 value of shipments and a new medium form was used. This form is a shortened version of the long form in that some of the general questions were pared down and the detailed lists of materials and products were limited to the more important items. The general limits for firms in this category were set at between \$100,000-\$500,000 value of shipments, but in the case of both the

short and medium forms there are lower cut-offs for a number of industries in which the smaller firms account for a larger share of total shipments.

Prior to 1961, the short form was limited to a question on the principal items of factory shipments. In the 1961 and 1962 censuses, in addition to the question on shipments of goods of own manufacture, general questions on employment and payroll and on total revenue were added on all short forms. The other elements of principal statistics, viz. value of materials, fuel and electricity and inventories, were estimated by using ratios based on the change in the value of shipments reported in 1961 and 1962. This was done to permit the complete compilation of basic industry statistics by industry and by geographic location. The proportions of the estimated data was generally less than 5 per cent of the total in each category of principal statistics.

Beginning with the 1963 census, general questions on total purchases of materials, fuel and electricity and on total inventory were added on the short forms. The two questions, however, were designed so that the data can be easily derived from respondents' regular accounting records. This will permit a complete tabulation of principal statistics without the necessity of estimating missing items and will result in increased accuracy for rural area statistics where small firms account for a relatively important part of industrial output.

The addition of extra questions on the short form in recent years has also permitted an increase in the cut-off limits for short forms in many industries. This has meant that many more firms are now receiving the short form instead of the long or medium form. It has also resulted in the withdrawal of the medium form in a number of industries, thus further simplifying collection and tabulation procedures.

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