

1962

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# MACHINE SHOPS

1962

## ANNUAL CENSUS OF MANUFACTURES

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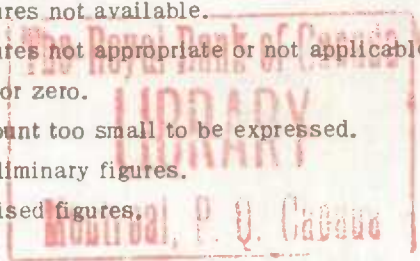
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### SYMBOLS

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- \* revised figures.



## MACHINE SHOPS

1962

Data presented in this report under the heading of Machine Shops reflect the implementation of the revised Standard Industrial Classification (S.I.C.) and 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 Machine Shops in the revised Standard Industrial Classification covers establishments primarily engaged in producing machine parts and equipment, other than complete machines, for the trade. This industry includes machine shops providing custom and repair services.

The introduction of the final stage of the establishment concept in the Annual Census of Manufactures had 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 negligible.

**TABLE 1. Principal Statistics - Manufacturing Activity,<sup>1</sup> 1957-61**  
Basis: Revised Standard Industrial Classification and New Establishment Concept<sup>2</sup>

Year	Estab- lish- ments	Employees						Cost of fuel and elec- tricity <sup>4</sup>	Cost of materials and supplies used <sup>4</sup>	Value of shipments of goods of own manu- facture <sup>4</sup>	Value added <sup>4</sup>
		Production and related workers <sup>4</sup>		Administrative and office employees <sup>3</sup>		Total <sup>4</sup>					
		Number	Wages	Number	Salaries	Number	Salaries and wages				
	No.		\$'000		\$'000			\$'000			
1957 .....	695	5,766	18,914	1,767	7,122	7,533	26,036	1,145	18,477	56,975	..
1958 .....	743	5,260	18,772	1,853	7,737	7,113	26,509	1,115	19,020	57,377	37,048
1959 .....	737	5,391	20,216	1,923	8,389	7,314	28,605	1,273	21,040	64,673	43,901
1960 .....	757	5,773	21,980	2,101	8,912	7,874	30,892	1,347	22,946	71,844	48,088
1961 .....	778	6,063	23,487	2,081	9,428	8,144	32,915	1,418	29,178	77,442	47,156

See footnotes following Table 3 A.

**TABLE 1 A. Principal Statistics - Manufacturing Activity and Total Activity,<sup>1</sup> 1961 and 1962**  
Basis: Revised Standard Industrial Classification and New Establishment Concept<sup>2</sup>

Year and province	Estab- lish- ments	Manufacturing activity							Total activity				
		Production and related workers <sup>4</sup>			Cost of fuel and elec- tricity <sup>5</sup>	Cost of materials and supplies used <sup>4</sup>	Value of shipments of goods of own manu- facture <sup>4</sup>	Value added <sup>4</sup>	Working owners and partners <sup>6</sup>		Total employees <sup>7</sup>		Total value added <sup>8</sup>
		Number	Man- hours paid	Wages					Number	With- drawals	Number	Salaries and wages	
	No.		'000			\$'000				\$'000		\$'000	
<b>1961</b>													
Newfoundland .....	2	72	154	253	11	457	871	401	—	—	85	298	397
Prince Edward Island .....	1												
Nova Scotia .....	24	170	364	616	43	721	1,919	1,165	20	63	211	768	1,241
New Brunswick .....	17	163	365	574	43	839	2,150	1,232	10	36	248	895	1,417
Quebec .....	167	1,682	3,697	6,200	352	8,650	21,705	12,893	124	456	2,113	8,275	13,100
Ontario .....	308	2,082	4,400	8,016	495	8,069	23,929	15,381	208	900	2,654	10,590	15,963
Manitoba .....	44	300	625	1,149	64	1,885	4,411	2,432	32	125	398	1,704	2,434
Saskatchewan .....	22	72	152	259	22	309	890	560	19	69	95	336	568
Alberta .....	64	693	1,493	3,151	172	4,319	10,548	6,192	31	122	913	4,307	6,335
British Columbia .....	129	760	1,448	3,289	215	3,992	11,018	6,836	64	237	1,039	4,566	7,129
<b>Totals</b> .....	<b>778</b>	<b>5,994</b>	<b>12,698</b>	<b>23,487</b>	<b>1,418</b>	<b>29,242</b>	<b>77,442</b>	<b>47,092</b>	<b>508</b>	<b>2,009</b>	<b>7,756</b>	<b>31,741</b>	<b>48,600</b>
<b>1962</b>													
Newfoundland .....	2	47	112	165	14	194	421	216	—	—	59	200	225
Prince Edward Island .....	1												
Nova Scotia .....	23	205	416	716	43	964	2,353	1,345	13	42	253	902	1,345
New Brunswick .....	19	241	528	946	55	1,639	3,512	1,891	11	45	345	1,388	2,144
Quebec .....	175	1,873	4,142	7,208	391	9,692	25,585	15,461	129	487	2,356	9,543	15,516
Ontario .....	331	2,430	5,228	9,702	588	9,618	29,677	19,775	241	1,056	3,053	12,849	20,335
Manitoba .....	44	319	708	1,263	60	2,175	5,252	2,985	33	113	430	1,890	2,984
Saskatchewan .....	23	74	171	285	29	288	849	584	19	76	96	377	631
Alberta .....	69	709	1,479	3,204	171	4,556	11,044	6,162	36	148	925	4,330	6,400
British Columbia .....	126	799	1,635	3,666	225	4,373	12,267	7,715	50	217	1,086	5,098	8,082
<b>Totals</b> .....	<b>813</b>	<b>6,697</b>	<b>14,420</b>	<b>27,155</b>	<b>1,577</b>	<b>33,699</b>	<b>90,960</b>	<b>56,135</b>	<b>532</b>	<b>2,185</b>	<b>8,603</b>	<b>38,576</b>	<b>57,662</b>

See Table 2 and footnotes following Table 3 A.



**TABLE 1B. 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 Concept<sup>2</sup>

Size group	Estab- lish- ments	Manufacturing activity							Total activity				
		Production and related workers <sup>4</sup>			Cost of fuel and elec- tricity <sup>5</sup>	Cost of materials and supplies used <sup>4</sup>	Value of shipments of goods of own manu- facture <sup>4</sup>	Value added <sup>4</sup>	Working owners and partners <sup>6</sup>		Total employees <sup>7</sup>		Total value added <sup>8</sup>
		Number	Man- hours paid	Wages					Number	With- drawals	Number	Salaries and wages	
	No.		'000			\$'000				\$'000		\$'000	
1961													
Under \$10,000 .....	73	34	36	59	24	123	477	328	71	161	46	74	344
\$ 10,000 to \$ 24,999 .....	158	205	343	585	96	812	2,657	1,743	160	558	250	692	1,767
25,000 " 49,999 .....	186	638	1,233	2,145	188	2,130	6,837	4,528	151	638	805	2,681	4,682
50,000 " 99,999 .....	160	1,024	2,141	3,751	268	3,613	11,121	7,277	106	514	1,309	4,849	7,588
100,000 " 199,999 .....	118	1,491	3,193	5,988	320	5,647	16,921	10,941	20	138	1,902	8,015	11,370
200,000 " 499,999 .....	57	1,361	2,909	5,437	284	6,813	17,908	10,992	—	—	1,783	7,592	11,180
500,000 " 999,999 .....	21	833	1,863	3,566	166	5,856	12,776	6,827	—	—	1,113	5,137	7,235
1,000,000 " 4,999,999 .....	5	408	980	1,957	72	4,247	8,744	4,456	—	—	548	2,701	4,435
5,000,000 and over .....	...	...	...	...	...	...	...	...	...	...	...	...	...
Head offices, sales offices and auxiliary units .....	...	...	...	...	...	...	...	...	...	...	...	...	...
Totals .....	778	5,994	12,698	23,487	1,418	29,242	77,442	47,092	508	2,009	7,756	31,741	48,600
1962													
Under \$10,000 .....	78	25	28	46	27	132	506	341	80	187	31	55	351
\$ 10,000 to \$ 24,999 .....	145	177	314	527	81	746	2,404	1,577	142	520	207	609	1,613
25,000 " 49,999 .....	183	579	1,177	2,011	183	2,250	6,720	4,283	159	640	718	2,459	4,381
50,000 " 99,999 .....	180	1,071	2,319	4,060	293	3,963	12,584	8,346	118	595	1,378	5,250	8,517
100,000 " 199,999 .....	125	1,465	3,205	6,057	374	5,993	18,300	12,163	27	205	1,939	8,372	12,690
200,000 " 499,999 .....	70	1,628	3,498	6,714	313	7,893	21,007	12,913	6	38	2,071	9,089	13,259
500,000 " 999,999 .....	22	950	2,132	4,078	174	6,157	14,474	8,179	—	—	1,212	5,594	8,481
1,000,000 " 4,999,999 .....	10	802	1,746	3,662	132	6,565	14,964	8,333	—	—	1,047	5,147	8,370
5,000,000 and over .....	...	...	...	...	...	...	...	...	...	...	...	...	...
Head offices, sales offices and auxiliary units .....	...	...	...	...	...	...	...	...	...	...	...	...	...
Totals .....	813	6,697	14,420	27,155	1,577	33,699	90,960	56,135	532	2,185	8,603	36,576	57,662

See footnotes following Table 3 A.

**TABLE 1C. Principal Statistics classified by Size Groups based on Manufacturing Value Added, 1961 and 1962**  
Basis: Revised Standard Industrial Classification and New Establishment Concept<sup>2</sup>

Size group	Estab- lish- ments	Manufacturing activity							Total activity				
		Production and related workers <sup>4</sup>			Cost of fuel and elec- tricity <sup>5</sup>	Cost of materials and supplies used <sup>4</sup>	Value of shipments of goods of own manu- facture <sup>4</sup>	Value added <sup>4</sup>	Working owners and partners <sup>6</sup>		Total employees <sup>7</sup>		Total value added <sup>8</sup>
		Number	Man- hours paid	Wages					Number	With- drawals	Number	Salaries and wages	
1961	No.		'000			\$'000				\$'000			\$'000
Under \$10,000 .....	142	96	124	204	65	490	1,438	876	141	372	121	241	911
\$ 10,000 to \$ 24,999 .....	198	467	844	1,467	168	2,068	5,607	3,347	195	774	569	1,764	3,437
25,000 " 49,999 .....	192	993	2,054	3,547	277	3,922	10,999	6,700	125	577	1,312	4,715	7,202
50,000 " 99,999 .....	122	1,209	2,519	4,635	284	4,568	13,589	8,738	47	285	1,542	6,194	9,066
100,000 " 199,999 .....	76	1,281	2,817	5,227	241	5,226	15,808	10,451	—	—	1,664	7,172	10,745
200,000 " 499,999 .....	43	1,540	3,359	6,451	311	8,721	21,256	12,524	—	—	2,000	8,953	12,804
500,000 " 999,999 .....	5	408	980	1,957	72	4,247	8,744	4,456	—	—	548	2,701	4,435
1,000,000 " 4,999,999 .....													
5,000,000 and over .....	...	...	...	...	...	...	...	...	...	...	...	...	...
Head offices, sales offices and auxiliary units .....	...	...	...	...	...	...	...	...	...	...	...	...	...
Totals .....	778	5,994	12,698	23,487	1,418	29,242	77,442	47,092	508	2,009	7,756	31,741	48,600
1962													
Under \$10,000 .....	140	74	99	162	58	479	1,353	813	144	394	87	183	856
\$ 10,000 to \$ 24,999 .....	192	416	799	1,381	161	1,798	5,202	3,233	176	692	509	1,670	3,307
25,000 " 49,999 .....	198	920	1,970	3,348	273	3,763	11,070	7,056	150	696	1,172	4,258	7,199
50,000 " 99,999 .....	130	1,190	2,597	4,722	320	5,309	14,805	9,174	56	371	1,534	6,326	9,528
100,000 " 199,999 .....	99	1,580	3,519	6,770	335	7,505	21,068	13,451	6	32	2,101	9,428	14,127
200,000 " 499,999 .....	41	1,565	3,302	6,275	266	8,029	20,369	12,237	—	—	1,978	8,525	12,468
500,000 " 999,999 .....	10	628	1,383	3,076	109	4,229	10,993	6,515	—	—	804	4,292	6,526
1,000,000 " 4,999,999 .....	3	324	751	1,421	56	2,587	6,100	3,656	—	—	418	1,896	3,651
5,000,000 and over .....	...	...	...	...	...	...	...	...	...	...	...	...	...
Head offices, sales offices and auxiliary units .....	...	...	...	...	...	...	...	...	...	...	...	...	...
Totals .....	813	6,697	14,420	27,155	1,577	33,699	90,960	56,135	532	2,185	8,603	36,576	57,662

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 Concept<sup>2</sup>

Size group	Estab- lish- ments	Manufacturing activity							Total activity				
		Production and related workers <sup>4</sup>			Cost of fuel and elec- tricity <sup>5</sup>	Cost of materials and supplies used <sup>4</sup>	Value of shipments of goods of own manu- facture <sup>4</sup>	Value added <sup>4</sup>	Working owners and partners <sup>6</sup>		Total employees <sup>7</sup>		Total value added <sup>8</sup>
		Number	Man- hours paid	Wages					Number	With- drawals	Number	Salaries and wages	
	No.		'000			\$'000				\$'000		\$'000	
<b>1961</b>													
Under \$10,000 .....	136	91	119	194	62	471	1,370	830	134	353	116	232	839
\$ 10,000 to \$ 24,999 .....	198	446	798	1,390	159	2,040	5,475	3,251	199	779	538	1,644	3,295
25,000 " 49,999 .....	188	949	1,944	3,336	260	3,393	10,106	6,449	123	562	1,216	4,275	6,543
50,000 " 99,999 .....	129	1,243	2,802	4,767	299	4,789	14,129	9,046	48	289	1,597	6,407	9,333
100,000 " 199,999 .....	75	1,241	2,733	5,094	233	4,810	14,974	10,008	4	25	1,611	6,978	10,385
200,000 " 499,999 .....	47	1,616	3,522	6,750	333	9,492	22,644	13,053	-	-	2,130	9,504	13,770
500,000 " 999,999 .....	5	408	979	1,957	71	4,246	8,744	4,456	-	-	548	2,700	4,434
1,000,000 " 4,999,999 .....													
5,000,000 and over .....	-	-	-	-	-	-	-	-	-	-	-	-	-
Head offices, sales offices and auxiliary units .....	...	...	...	...	...	...	...	...	...	...	...	...	...
<b>Totals .....</b>	<b>778</b>	<b>5,994</b>	<b>12,698</b>	<b>23,487</b>	<b>1,418</b>	<b>29,242</b>	<b>77,442</b>	<b>47,092</b>	<b>508</b>	<b>2,009</b>	<b>7,756</b>	<b>31,741</b>	<b>48,600</b>
<b>1962</b>													
Under \$10,000 .....	136	72	96	157	56	458	1,310	785	138	376	85	177	792
\$ 10,000 to \$ 24,999 .....	192	407	780	1,344	154	1,774	5,127	3,194	179	699	491	1,590	3,227
25,000 " 49,999 .....	196	892	1,908	3,230	260	3,666	10,805	6,898	151	693	1,131	4,085	6,984
50,000 " 99,999 .....	131	1,174	2,559	4,625	314	5,173	14,505	9,019	58	384	1,504	6,135	9,253
100,000 " 199,999 .....	103	1,624	3,616	6,964	352	7,560	21,358	13,680	6	33	2,135	9,574	14,224
200,000 " 499,999 .....	40	1,529	3,221	6,121	260	7,735	19,791	11,913	-	-	1,921	8,283	11,975
500,000 " 999,999 .....	12	675	1,489	3,292	126	4,744	11,964	6,990	-	-	918	4,835	7,555
1,000,000 " 4,999,999 .....	3	324	751	1,421	56	2,587	6,100	3,656	-	-	418	1,896	3,651
5,000,000 and over .....	-	-	-	-	-	-	-	-	-	-	-	-	-
Head offices, sales offices and auxiliary units .....	...	...	...	...	...	...	...	...	...	...	...	...	...
<b>Totals .....</b>	<b>813</b>	<b>6,697</b>	<b>14,420</b>	<b>27,155</b>	<b>1,577</b>	<b>33,699</b>	<b>90,960</b>	<b>56,135</b>	<b>532</b>	<b>2,185</b>	<b>8,603</b>	<b>36,576</b>	<b>57,662</b>

See footnotes following Table 3 A.

**TABLE 1 E. Principal Statistics classified by Size Groups based on Total Employed,<sup>10</sup> 1961 and 1962**  
Basis: Revised Standard Industrial Classification and New Establishment Concept<sup>2</sup>

Size group	Estab- lish- ments	Manufacturing activity							Total activity				
		Production and related workers <sup>4</sup>			Cost of fuel and elec- tricity <sup>5</sup>	Cost of materials and supplies used <sup>4</sup>	Value of shipments of goods of own manu- facture <sup>4</sup>	Value added <sup>4</sup>	Working owners and partners <sup>6</sup>		Total employees <sup>7</sup>		Total value added <sup>8</sup>
		Number	Man- hours paid	Wages					Number	With- drawals	Number	Salaries and wages	
	No.		'000			\$'000				\$'000		\$'000	
<b>1961</b>													
Under 5 employees .....	307	391	700	1,235	191	1,998	5,999	3,808	296	1,007	476	1,502	3,878
5- 14 employees .....	310	1,829	3,761	6,710	482	7,040	20,670	13,161	203	953	2,344	8,719	13,691
15- 49 " .....	141	2,620	5,686	10,553	521	12,613	33,454	20,535	9	49	3,425	14,586	21,272
50- 99 " .....	20	1,154	2,550	4,989	223	7,591	17,319	9,588	-	-	1,511	6,933	9,759
100-199 " .....													
200-499 " .....	-	-	-	-	-	-	-	-	-	-	-	-	-
500 employees and over .....	-	-	-	-	-	-	-	-	-	-	-	-	-
Head offices, sales offices and auxiliary units .....	...	...	...	...	...	...	...	...	...	...	...	...	...
<b>Totals .....</b>	<b>778</b>	<b>5,994</b>	<b>12,698</b>	<b>23,487</b>	<b>1,418</b>	<b>29,242</b>	<b>77,442</b>	<b>47,092</b>	<b>508</b>	<b>2,009</b>	<b>7,756</b>	<b>31,741</b>	<b>48,600</b>
<b>1962</b>													
Under 5 employees .....	311	380	712	1,235	195	2,186	6,279	3,891	298	1,031	456	1,476	3,962
5- 14 employees .....	328	1,905	4,107	7,348	532	8,145	23,794	15,115	223	1,089	2,432	9,526	15,453
15- 49 " .....	145	2,603	5,720	10,982	553	12,763	34,469	21,391	11	65	3,404	15,261	22,261
50- 99 " .....	26	1,472	3,093	5,958	226	8,604	20,849	12,169	-	-	1,850	8,009	12,411
100-199 " .....	3	337	789	1,632	72	2,000	5,569	3,569	-	-	461	2,303	3,574
200-499 " .....	-	-	-	-	-	-	-	-	-	-	-	-	-
500 employees and over .....	-	-	-	-	-	-	-	-	-	-	-	-	-
Head offices, sales offices and auxiliary units .....	...	...	...	...	...	...	...	...	...	...	...	...	...
<b>Totals .....</b>	<b>813</b>	<b>6,697</b>	<b>14,420</b>	<b>27,155</b>	<b>1,577</b>	<b>33,699</b>	<b>90,960</b>	<b>56,135</b>	<b>532</b>	<b>2,185</b>	<b>8,603</b>	<b>36,576</b>	<b>57,662</b>

See footnotes following Table 3 A.

**TABLE 1F. Principal Statistics classified by Type of Organization, 1961 and 1962**  
Basis: Revised Standard Industrial Classification and New Establishment Concept<sup>2</sup>

Type of organization	Establishments	Manufacturing activity							Total activity				
		Production and related workers <sup>4</sup>			Cost of fuel and electricity <sup>3</sup>	Cost of materials and supplies used <sup>4</sup>	Value of shipments of goods of own manufacture <sup>4</sup>	Value added <sup>4</sup>	Working owners and partners <sup>6</sup>		Total employees <sup>7</sup>		Total value added <sup>8</sup>
		Number	Man-hours paid	Wages					Number	Withdrawals	Number	Salaries and wages	
	No.		'000			\$'000				\$'000			\$'000
<b>1961</b>													
Individual ownerships .....	286	737	1,420	2,379	243	3,052	8,397	5,064	287	1,129	810	2,525	5,189
Partnerships .....	105	351	687	1,180	132	1,415	4,526	2,963	221	880	392	1,262	3,137
Incorporated companies .....	387	4,906	10,591	19,929	1,043	24,774	64,519	39,065	—	—	6,554	27,953	40,273
Cooperatives .....	—	—	—	—	—	—	—	—	—	—	—	—	—
Head offices, sales offices and auxiliary units .....	...	...	...	...	...	...	...	...	...	...	...	...	...
<b>Totals .....</b>	<b>778</b>	<b>5,994</b>	<b>12,698</b>	<b>23,487</b>	<b>1,418</b>	<b>29,242</b>	<b>77,442</b>	<b>47,092</b>	<b>508</b>	<b>2,009</b>	<b>7,756</b>	<b>31,741</b>	<b>48,600</b>
<b>1962</b>													
Individual ownerships .....	295	725	1,452	2,414	249	3,225	9,019	5,538	296	1,182	787	2,577	5,593
Partnerships .....	111	402	809	1,389	149	1,885	5,734	3,676	236	1,002	443	1,491	3,757
Incorporated companies .....	407	5,570	12,159	23,351	1,180	28,589	76,208	46,921	—	—	7,373	32,508	48,312
Cooperatives .....													
Head offices, sales offices and auxiliary units .....	...	...	...	...	...	...	...	...	...	...	...	...	...
<b>Totals .....</b>	<b>813</b>	<b>6,697</b>	<b>14,420</b>	<b>27,155</b>	<b>1,577</b>	<b>33,699</b>	<b>90,960</b>	<b>56,135</b>	<b>532</b>	<b>2,185</b>	<b>8,603</b>	<b>36,576</b>	<b>57,662</b>

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 Concept<sup>1</sup>

Item	1961	1962
	\$'000	
<b>Manufacturing activity:</b>		
Value of shipments—Goods of own manufacture .....	77,442	90,960
Add: Closing inventory—Goods in process .....	1,969	2,347
Finished goods .....	1,382	1,484
Deduct: Opening inventory—Goods in process .....	1,706	2,051
Finished goods .....	1,336	(3,380)
Gross output—Manufacturing activity .....	77,752	91,411
Deduct: Cost of materials and supplies used in manufacturing activity .....	29,242	33,699
Cost of fuel and electricity used .....	1,418	(30,660)
Value added—Manufacturing activity .....	47,092	56,135
<b>Non-manufacturing activities:</b>		
Value of shipments—Goods not of own manufacture .....	..	6,488
Add: All other revenue .....	..	266
Closing inventory—Goods purchased for resale .....	1,125	1,210
Deduct: Purchases of goods for resale as such .....	..	4,894
Opening inventory—Goods not of own manufacture .....	777	1,097
Cost of all other materials and supplies used .....	..	446
Value added—Non-manufacturing activities .....	1,508	1,527
<b>Total value added .....</b>	<b>48,600</b>	<b>57,662</b>

See footnote following Table 3 A.



**TABLE 3. Employment and Payroll, 1961 and 1962**  
Basis: Revised Standard Industrial Classification and New Establishment Concept<sup>2</sup>

Year and province	Employees										Salaries and wages					
	Production and related workers				Adminis- trative and office <sup>6</sup>		Sales and distribution <sup>6</sup>		Total employees <sup>7,8</sup>		Production and related workers		Adminis- trative and office	Sales and distri- bution	Total salaries and wages	
	Manufacturing <sup>4</sup>		Other <sup>5</sup>								Manufac- turing	Other				
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female						Manufac- turing
	number										\$'000					
1961																
Newfoundland .....	}	70	2	..	..	..	..	..	..	82	3	253	..	..	..	298
Prince Edward Island .....		168	2	..	..	..	..	..	..	199	12	616	..	..	..	767
Nova Scotia .....		163	—	..	..	..	..	..	..	229	19	574	..	..	..	895
New Brunswick .....		1,645	37	..	..	..	..	..	..	1,977	136	6,200	..	..	..	8,278
Quebec .....		2,024	58	..	..	..	..	..	..	2,435	219	8,016	..	..	..	10,590
Ontario .....		298	2	..	..	..	..	..	..	377	21	1,149	..	..	..	1,704
Manitoba .....		71	1	..	..	..	..	..	..	90	5	259	..	..	..	336
Saskatchewan .....		685	8	..	..	..	..	..	..	862	51	3,151	..	..	..	4,307
Alberta .....		755	5	..	..	..	..	..	..	976	63	3,269	..	..	..	4,566
British Columbia .....																
Totals .....		5,879	115	..	..	..	..	..	..	7,227	529	23,487	..	..	..	31,741
1962																
Newfoundland .....	}	47	—	—	—	10	2	—	—	57	2	166	—	35	—	200
Prince Edward Island .....		202	3	—	—	35	10	3	—	240	13	716	—	175	11	902
Nova Scotia .....		241	—	—	—	47	25	32	—	320	25	946	—	296	146	1,388
New Brunswick .....		1,842	31	12	—	303	110	57	1	2,214	142	7,208	26	2,028	281	9,543
Quebec .....		2,387	43	13	3	360	178	68	1	2,828	225	9,702	71	2,760	316	12,849
Ontario .....		319	—	—	—	73	23	13	2	405	25	1,263	—	554	72	1,890
Manitoba .....		74	—	4	—	11	4	3	—	92	4	285	14	64	14	377
Saskatchewan .....		707	2	—	—	157	39	17	3	881	44	3,203	—	1,009	117	4,330
Alberta .....		794	5	2	—	190	65	30	—	1,016	70	3,666	7	1,307	118	5,098
British Columbia .....																
Totals .....		6,613	84	31	3	1,186	456	223	7	8,053	550	27,155	118	8,229	1,074	36,576

See footnotes following Table 3 A.

**TABLE 3 A. Production and Related Workers,<sup>4</sup> - Manufacturing Activity, by Month, 1962**  
Basis: Revised Standard Industrial Classification and New Establishment Concept<sup>2</sup>

Month	Establishments reporting monthly detail	
	Male	Female
	number	
January .....	5,071	78
February .....	5,105	74
March .....	5,133	73
April .....	5,191	77
May .....	5,227	77
June .....	5,282	73
July .....	5,354	76
August .....	5,269	77
September .....	5,260	73
October .....	5,210	79
November .....	5,189	77
December .....	5,138	77
Average for establishments reporting monthly detail (collected only for large establishments) .....	5,214	76
Average for small establishments (only annual averages collected) .....	1,399	8
Average for all establishments .....	6,613	84

<sup>1</sup> See Table 2 and Explanatory Notes concerning manufacturing and non-manufacturing activities.

<sup>2</sup> See Explanatory Notes.

<sup>3</sup> 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.

<sup>4</sup> Conceptually identical to previous years. See Explanatory Notes.

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

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

<sup>7</sup> 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.

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

<sup>9</sup> 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.

<sup>10</sup> 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 Concept<sup>1</sup>

Description	Quantity	Cost
		\$'000
1. Raw materials and components used .....	...	30,635
2. Containers and other packaging materials and supplies used .....		117
3. Operating, maintenance and repair supplies used (excluding fuel) .....		2,090
4. Amount paid out to others for work done on materials owned by establishments .....		857
<b>Total</b> .....		<b>33,699</b>

<sup>1</sup> See Explanatory Notes.

**TABLE 5. Fuel and Electricity Used<sup>1</sup> in Manufacturing Activity,<sup>2</sup> 1962**  
Basis: Revised Standard Industrial Classification and New Establishment Concept<sup>1</sup>

Description	Quantity	Cost
		\$'000
1. Large establishments which reported commodity detail:		
Bituminous coal:		
(a) From Canadian mines .....	ton 1,577	29
(b) Imported .....	" 600	7
Sub-bituminous coal (from Alberta mines only) .....	" 60	1
Anthracite coal .....	" 131	3
Lignite coal .....	" 312	1
Coke .....	" 34	1
Gasoline (including gasoline used in cars and trucks) .....	Imp. gal. 809,457	320
Fuel oil including kerosene or coal oil .....	" 916,805	155
Wood .....	cord 294	3
Gas:		
(a) Liquefied petroleum gases .....	Imp. gal. 27,298	13
(b) Other manufactured gas .....	M cu. ft. 1,179	2
(c) Natural gas .....	" 137,807	95
Other fuel .....	...	3
Electricity purchased .....	kwh. 19,834,750	485
Steam purchased .....	...	1
2. Estimate for small establishments for which no data were collected:		
Fuel and electricity .....	...	458
3. All establishments:		
Total fuel and electricity used .....	...	1,577

<sup>1</sup> Does not include fuel and electricity produced for own use.

<sup>2</sup> 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.

<sup>3</sup> See Explanatory Notes.

**TABLE 6. Shipments of Goods of Own Manufacture, 1962**  
Basis: Revised Standard Industrial Classification and New Establishment Concept<sup>1</sup>

Description	Quantity	Value
		\$'000
1. All products manufactured .....	...	37,379
2. Amount received in payment for work done on materials and products owned by others .....		53,827
Less adjustment for value of sales taxes, excise duties and outward transportation charges which could not be deducted from individual commodity items described above .....		(246)
Net adjustment for establishments receiving progress payments <sup>2</sup> .....		-
<b>Total adjusted value of shipments and work done</b> .....		<b>90,960</b>

<sup>1</sup> See Explanatory Notes.

<sup>2</sup> See footnote 1, Table 7.

**TABLE 7. Industry Inventories, 1962<sup>1</sup>**  
Basis: Revised Standard Industrial Classification and New Establishment Concept<sup>2</sup>

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: <sup>3</sup>						
Newfoundland .....	} 43	—	—	43	—	43
Prince Edward Island .....						
Nova Scotia .....	210	13	2	224	6	230
New Brunswick .....	417	80	46	543	101	645
Quebec .....	1,533	723	499	2,755	113	2,869
Ontario .....	1,282	632	267	2,182	434	2,616
Manitoba .....	381	74	83	538	40	578
Saskatchewan .....	86	15	34	136	15	151
Alberta .....	902	328	262	1,492	113	1,606
British Columbia .....	771	185	135	1,092	273	1,365
Totals <sup>4</sup> .....	5,626	2,051	1,329	9,005	1,097	10,103
Closing:						
Newfoundland .....	} 61	3	—	64	—	64
Prince Edward Island .....						
Nova Scotia .....	214	11	2	227	7	234
New Brunswick .....	542	120	79	741	131	872
Quebec .....	1,517	777	604	2,698	102	3,000
Ontario .....	1,342	900	305	2,546	383	2,930
Manitoba .....	361	47	79	487	20	507
Saskatchewan .....	97	23	78	199	48	247
Alberta .....	1,110	245	192	1,547	227	1,773
British Columbia .....	760	221	145	1,126	293	1,418
Totals <sup>4</sup> .....	6,003	2,347	1,484	9,834	1,210	11,045

<sup>1</sup> 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.

<sup>2</sup> See Explanatory Notes.

<sup>3</sup> 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.

<sup>4</sup> Figures may not add due to rounding.

**TABLE 8. Capital and Repair Expenditure, 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 .....	756	1,898	2,654	309	772	1,081	1,065	2,670	3,735
1961 .....	466	2,198	2,664	331	803	1,134	797	3,001	3,798
1962 .....	412	2,400	2,812	441	927	1,368	853	3,327	4,180

Source: Business Finance Division. — DBS.

Directory of Firms: Machine Shops, 1962

Name	Location
<b>Newfoundland:</b>	
Fry's Engineering Co. Ltd. ....	St. John's
Hall Metals, Ltd. ....	St. John's
<b>Prince Edward Island:</b>	
Hall and Stavert, Ltd. ....	Charlottetown
<b>Nova Scotia:</b>	
Annand, C.A., Ltd. ....	Truro
Antigonish Machine Shop, Ltd. ....	Antigonish
Atlantic Spring and Machinery Co. Ltd. ....	Sydney
Dartmouth Machine Co. Ltd. ....	Dartmouth
Digby Diesel Shop ....	Digby
Digby Forging and Machine Co. Ltd. ....	Digby
Fader Agencies, Ltd. ....	Dartmouth
Falmouth Machine Shop ....	Falmouth
Fraser, T.J. ....	Bridgewater
Gateway Engineering, Ltd. ....	Yarmouth
Gunn's Machine and Welding Shop ....	New Glasgow
Hamilton & Porter ....	Yarmouth
Maritime Cylinder Grinding Co. Ltd. ....	Halifax
McLellan's Machine Shop ....	Lower Onslow
Moir, W. & A., Limited ....	Halifax
Nova Scotia Armature Works Limited ....	Halifax
Parnell, E.H. Machine Co. ....	Liverpool
Shaw and MacDonald, Ltd. ....	Glace Bay
Sjoberg, Carl, Machine Shop ....	Metegan-Centre
Spencer, J.C. Roy ....	Truro
Stellarton Machine Shop ....	Stellarton
Truro Machine Shop ....	Lower Truro
Webb Engineering, Limited ....	Halifax
<b>New Brunswick:</b>	
Apen Machine Works, Ltd. ....	Moncton
Atlantic Engine Rebuilders ....	Moncton
Bathurst Machine and Supply ....	Bathurst
Balanger's Machine Shop ....	Grand Falls
Castle Machine Works ....	Newcastle
Craig's Machine Shop Limited ....	Harland
Fredericton Welding and Machine Shop ....	Fredericton
Horsnell Machine and Iron Works, Ltd. ....	Fredericton
Hub Machine Shop ....	Moncton
Industrial Machine Works ....	Bathurst
Kelso, Wm. W. and Sons, Ltd. ....	Sussex
Laforge, Armand ....	Grand Falls
Meed's Machine Shop, Ltd. ....	Bristol
Miramichi Foundry Machine Works, Ltd. ....	Chatham
Moncton Foundry and Machine Co. Ltd. ....	Moncton
Shediac Garage and Machine Shop ....	Shediac
Stephenson and Co. Limited ....	Saint John
Thomas Brothers ....	Centreville
Williamson, J. Fred, Limited ....	Saint John
<b>Quebec:</b>	
A.B.C. Tool and Die and Mfg. Co. Reg'd. ....	Montreal
Acme Mold and Die, Reg'd. ....	Montreal
Albon Welding and Mechanical Works, Ltd. ....	Montreal
Allie Machine Shop ....	Hull
Amos Machinerles (1960), Inc. ....	Amos
Arell Machine Works, Reg'd. ....	Montreal
Ateliers Des Sourds-Muets ....	Montréal
Atelier Mécanique, Enrg. ....	Pike River
Atelier Mécanique D'Alma, Enrg. ....	Ville D'Alma
Atelier Mécanique de Beauceville, Enrg. ....	Beauceville
Atelier Mécanique Tremblay, Enrg. ....	St-Cyprien
Audet, Roméo ....	St-Tite des Caps
Auger, H., Welding Co. Ltd. ....	Montreal
B.L.R. Precision Works ....	Ville St-Michel
Baum S. ....	Montreal
Beaudry Machine Shop ....	Joliette
Bédard, F. X. ....	Québec
Bibeau and Frères, Enrg. ....	St-Félix-de-Valois
Blanchet, Gérard ....	St-Apollinaire
Boisclair, Antoine ....	St-Gabriel de Brandon
Bolvin and Fils, Enrg. ....	Chicoutimi
Boulanger, T.H., Enrg. ....	Montreal
Bowers Machine Co. Ltd. ....	Montreal
Branconnier and Carreau ....	Senneterre
British American Machine Co. ....	Montreal
Brousseau, Rolland ....	Montreal
Cadioux, Wilfred ....	Montreal
Causapsal Machine Shop ....	Causapsal
Chambly Machine Works, Ltd. ....	Montreal
Champlain, de Roger ....	Luceville
Chatham Machined Parts, Ltd. ....	Montreal
Cliche, Jos., and Fils Ltée ....	Mégantic
Constructive Engineering Co. ....	Montreal
Côté, Wilrose ....	Ste-Philomène



Directory of Firms: Machine Shops, 1962 - Continued

Name	Location
Quebec - Continued:	
Crammond and Son, Limited	Montreal
Crankshaft Grinder, Reg'd.	Montreal
Crescent Machinery, Ltd.	Montreal
Crosbie, A. and Sons, Ltd.	Montreal
Dallaire Metal Industries, Inc.	Ville St-Michel
Denis Machine Shop	Barraute
Després, Alfred, Inc.	Quebec
Desroberts, Inc.	Trois-Rivières
Dettson Manufacturing Co. Ltd.	Sherbrooke
Difalco, P., and Co.	Montreal
Dion, Yvon	Matane
Docal, Limited	Montreal
Dominion Machine Shop, Reg'd.	Quebec
Dominion Tool Works	St. Lambert
Drummond Machine Shop, Enrg.	Drummondville
Dubé, Aurèle	Ville St-Michel
Dubuc Machine Shop	Montreal
Durocher, Yves Machine Shop	St-Jean
Eastern Rebuilders, Ltd.	Bedford
Eastern Townships Machine Works, Ltd.	Sherbrooke
Economic Production Work, Ltd.	Montreal
Electro Processes (Quebec), Ltd.	Montreal
Ellison Machine Shop	Montreal
Empire Machine Company Limited	Montreal
Engine Rebuilders Company	Montreal
Fabrite Metal Products, Inc.	Chateaugay
Feeley, T. and Sons Machine Shop, Ltd.	Granby
Gagné Machine Shop	Montreal
Gaudreau, J.E., Enrg.	Montmagny
Gendron and Frères, Enrg.	Rivière-du-Loup
General Machine Works, Limited	Montreal
General Machine Works, Limited	Longueuil
Gingras and Charest, Enrg.	Québec
Gordon Machine Shop	Lachute
Guérette & Frère, Limitée	Longueuil
H. and A. and Industrial Metallizing, Ltd.	Montreal
Handy Machine Shop and Supply, Ltée	Pont-Viau
Hooker's Machine Works and Foundry	Huntingdon
Houde E., and Fils, Enrg.	St-Georges-Est
Henrichon, Lucien	St-Gabriel-de-Brandon
Huot, Inc.	Québec
Iberville Machine Shop	Iberville
Industrial Machinery, Limited	Montreal
Industrial Welding and Machine Work, Ltd.	Noranda
Jacques Precision Works, Ltd.	Montreal
Jean, L. de and Co. Limited	Montréal
Joly Engineering, Ltd.	Montreal
Joyal Machine Shop	Drummondville
Jude Tooling and Machining, Co.	Montreal
Julien, Louis and Fils, Enrg.	St-Anaclet
Kiely, Martin, Co. Ltd.	Montreal
Kelly Machine Shop, Ltée	Quebec
Lachapelle Machine Shop, Enrg.	Terrebonne
La Fonderie Ouellet, Enrg.	St. Léonard d'Aston
La Fonderie "Universal", Enrg.	Victoriaville
Langevin, Gérard	Montreal
Lapointe et Bélanger, Ltée	Ancienne-Lorette
La Soudure de Thetford	Thetford Mines
Lar Machinery, Inc.	Metabetchouan
Laurentian Metal Products Co. Ltd.	Hull
Leader Products Co. Ltd.	Montreal
Lefèvre Frères, Limited	Montreal
Lemire, Thomas	Guigues
Les Ateliers Mécaniques, Enrg.	Roberval Nord
Les Entreprises St. Joseph, Ltée	St-Joseph
Les Equipements Universels, Enrg.	L'Acadie
Les Industries de Mont Laurier	Mont-Laurier
Les Pompes Cartier, Enrg.	Joliette
Lessard Machineries, Enrg.	St-Wenceslas
Machine Industries, Ltd.	Longueuil
Machine Repair and Maintenance	Montreal
Machine Shop Levis Létourneau	Quebec
Machine Works, Limited	Montreal
Mallhot Hydraulic Enrg.	St-Jacques
Malo, A., Co. Ltd.	Joliette
Massicotte and Arcand, Inc.	Cap-de-la-Madeleine
Matte, Gaston	La Tuque
Ménard, Alfred	Chicoutimi
Met Machine Works, Reg'd.	Montreal
Metro Engineering Company, Ltd.	Ville St-Pierre
Miller C. & H., Bros.	Gaspé Harbour
Miller Bros. and Sons, Limited	Montreal
Mining Machinery and Equipment, Ltd.	Noranda
Modern Machine Shop	Huntingdon
Mohawk Motors Mfg., Ltd.	Montreal
Monarch Punch and Die Enrg. Co. Ltd.	Montreal
Montcalm Machine Shop	Montreal
Mont-Joli Machinerie, Ltée	Mont-Joli
Montreal Materials Processing Co. Ltd.	Montreal
Montreal Mechanical Enterprise Co. Ltd.	Montreal
Montreal Scale Works, Enrg.	Montreal

Directory of Firms: Machine Shops, 1962 - Continued

Name	Location
<b>Quebec - Concluded:</b>	
Morin Frère, Enrg.	La Guadeloupe
Morris, F.L., Machine Shop	Granby
Nordale Metalcraft, Ltd.	Sherbrooke
15 th Avenue Machine Shop	Ville St. Michel
Ostergaard, E.	Montreal
Ouellet et Laberge, Ltée	Québec
Papineau Machine Shop	Ville St. Michel
Parent, Pierre	Ste-Agathe-Des-Monts
Paulson Machine Co. Ltd.	Lachute
Poulin, J.E., Reg'd.	Montreal
Precision Industries, Reg'd.	Montreal
Princeville Machine Shop, Inc.	Princeville
Proulx A. and Fils	Iberville
Provost, Edouard	Sherbrooke
Quebec Tools and Machine Works, Ltd.	Montreal
Rainville, Georges, Machine Shop	Iberville
Rapid Steel and Brass Products Co.	Montreal North
Réfrigération et Machinerie Sansoucy	St. Césaire
Remembrance Machine Shop, Reg'd.	Lachine
Rimouski Transfer Machine Shop, Ltd.	Rimouski
Rite Manufacturing, Ltd.	Montreal
Rona Machine Works, Reg'd.	Montreal
Ruel, J.R.	Giffard
Saguenay Industries, Limited	Port-Alfred
Salonen Machine and Repair Shop	Rouyn
Sicotte Machine Shop, Ltd.	Montreal
Sicotte, Paul et Fils, Ltée	Ste-Thérèse
Skyway Hydraulics Co.	Montreal
Soucy, Adélar, Ltée	St-Ludger
Soudure Industrielle, Enrg.	Drummondville-Sud
St. Cyr Loader	Cadillac
Steel Flange Manufacturing Co.	St. Pierre
Stewart Machine Works, Limited	Noranda
St. John's Tool and Die	St-Jean
Succession Isaie Quenneville	Valleyfield
Sunset Industries, Reg'd.	Montreal
Tac Machine Shop, Enrg.	St-Jérôme
Tanguay G. and Fils	Montréal
Trahan Machine Shop	Grand'mère
Tremblay, Vincent, Inc.	Montréal
Trottiér, A. and Fils, Ltée	Dolbeau
Prudeau, M.G.	Laprairie
Turbo Precision Industries, Ltd.	Montreal
Universal Die and Tool Mfg., Ltd.	Montreal
Valle Machine Shop	Shawinigan Falls
Valleyfield Machine Parts	Ville Jacques-Cartier
Verdun Machine Shop, Reg'd.	St. Lambert
Victory Tool and Machine Co. Ltd.	Montreal
Vohl, Adrien & Fils, Ltée	St-Marc-des-Carières
Vulcan Machine Works	St-Jérôme
<b>Ontario:</b>	
A-1 Engineering	Toronto
Aalus Engineering Co. Ltd.	Toronto
Accurate Engineering Co.	Toronto
Accurate Stamp and Stencil Co.	Hamilton
Acme Welding Works, Ltd.	North Bay
Acro Machine and Tool Company Limited	Scarborough
Active Key Works, Limited	Toronto
Acton Precision Engineering	Acton
Advance Machine and Tools Co. Ltd.	Windsor
Advance Tool and Mould Co. Ltd.	Scarborough
Alda Machine and Tool Co.	Toronto
Allied Machine and Tool	Etobicoke
All-Weld Company Limited	Toronto
Alskip Machine Works	Long Branch
Altherg's Machine Shop	Toronto
Amco Machine Co.	Port Arthur
Andros Machine Company	Toronto
Apex Machine and Tool Co.	Toronto
Applefors Bros.	Tillsonburg
Arc Tool and Die Works, Ltd.	Burlington
Armstrong Bros Engineering Co. Ltd.	Toronto
Art Metal Craft	L'Orignal
Associated Tool and Mfg. Co. Ltd.	Downsview
Atkins and Hoyle, Limited	Toronto
Atkinson, C.H. and Co.	Richmond Hill
Atlas Poplar Company, Limited	Toronto
Auged Engineering and Machine Shop Co.	Toronto
Austin, A., Industries, Ltd., The	Toronto
Automotive Machine Service	Etobicoke
Avery Machine, Ltd.	Toronto
Aylmer Toolcraft	Aylmer
Buderski, Frank and Son, Ltd.	Timmins
Baird Machines, Ltd.	Woodstock
Bakerville Foundry and Machine Shop	Woodslee
Ball, J. Machine Shop	Wellington
Barlow Tool and Machine, Limited	Hamilton
Barnes Machine Shop	Wallaceburg
Barrie Welding and Machine, Ltd.	Barrie



Directory of Firms: Machine Shops, 1962 - Continued

Name	Location
<b>Ontario - Continued:</b>	
Bassett, Frank	Picton
Beasleys Machine Shop	Sarnia
Beaver Equipment Mfg., Co. Ltd.	Scarborough
Bee, F.	Woodstock
Beehoo Engineering	Streetsville
Bekaert Machine and Tool Repair	Chatham
Belmar Welding, Ltd.	St. Catharines
Belpree Co. Ltd.	Scarborough
Bennett and McPhie, Limited	Toronto
Bexton, S. and Son	London
Bolton Die Company	Windsor
Bowman, Joe P.	Brantford
Bowman Tools	Drumbo
Branson Machine and Tool	Peterborough
Brantford Precision, Ltd.	Brantford
Brigden Manufacturing Co.	Hornby
Britton Machine and Welding, Ltd.	Guelph
Brown Engineering Corp.	Toronto
Bruno Machine Shop Co.	Toronto
Burston Mfg., Limited	Toronto
Carson J., and Sons	London
C. and E. Machine and Die Co.	Cooksville
Champion Machine and Tool Co. Ltd.	Cooksville
Clark Machine Co. Ltd.	St. Catharines
Clarke, Ben Machine Works	St. Catharines
Clay, T., Welding and Machine Shop	Stratford
Coles Machine Shop	Hamilton
Coleman Machine and Tool Co. Ltd.	Toronto
Connecting Rod Specialty, Ltd.	Toronto
Cooke and Denison, Ltd.	Guelph
Cooper Machine and Tool Co.	Toronto
Craig, James C., and Son	Toronto
Crysler Machine Co. Limited	St. Catharines
Custom Machine Works and Metallizing, Ltd.	Point Edward
Custom Steel	Oshawa
Dalby Machine Shop	Oakville
Damman Machine Shop	Waterloo
Damp Bros. Machine and Welding Co.	Toronto
Dashwood, D. and Sons	Dunville
Davidson Machine Shops, Ltd.	Scarborough
Debo Instruments	Brampton
Delhi Die and Mfg. Co. Ltd.	Delhi
Dillon E. & R. Mfg. Co.	Toronto
Dingwell's Machine Shop	Port Arthur
Disco, Limited	Scarborough
Dodd, T.W. Machine Works	St. Catharines
Duncan Tool & Die (Galt), Ltd.	Galt
Dupuis, C. Laurier	Pakenham
Durrant Machine Shop	Collingwood
Dyer and Kerst, Limited	Toronto
East-End Welding, Limited	Hamilton
Eastview Engineering Machine Shop	Eastview
Ebert Welding, Ltd.	New Liskeard
Economy Machine Tool Co.	Cobourg
Edwards, George H., Fine Instruments	Toronto
Edwards, Frank, Machine and Tool	Midland
Electro Processes Co.	Etobicoke
Elliot's Machine Shop	Strathroy
Elliott, Leonard, Tools, Ltd.	Brantford
Elrose Machine Products, Limited	Weston
Enmar	Scarborough
Evans, H., Machinery Co.	London
Feldcamp and Fraser Machine Works	North Bay
Ferraby, J.H., Machine and Repair Shop Service	London
Finkle, Wm., Machine Co.	Belleville
Flexen, C.E., Machine Co. Ltd.	St. Thomas
Forex Machine and Tool Co. Ltd.	Toronto
Foscarini, Anthony	Scarborough
Foster and Robb Machine and Repair	Kingston
Freiburger, Frank	Walkerton
Frey, Otto G.	Willowdale
Frey Instrument Co. Ltd.	Smith Falls
General Instrument Co.	Toronto
General Machine Shop, Ltd.	London
General Machine Shop, K. & K.	Woodstock
General Metallic Parts, Ltd.	Toronto
Geometrix, Ltd.	Toronto
Gilliam Components	Toronto
Girrotti Machine Works, Ltd.	St. Catharines
Goodwin Chuck Co. Ltd.	Brantford
Goodwin Metal Products, Ltd.	Peterborough
Great Lakes Boat and Machine Co. Ltd.	Midland
Great Lakes Machine and Metal Fabricators, Limited	Sault Ste Marie
Greenleaf Company (Belleville), Ltd.	Belleville
Greville-Gattie Machine Co.	Toronto
Grimsby Machine Shop	Grimsby
H. & J. Precision Industries	Peterborough
H. & M. Machine Co.	Renfrew
H. & O. Centerless Grinding, Ltd.	Kitchener
Hallburton Machine Shop	Haliburton
Hall, Fred and Son, Ltd.	Hamilton



Directory of Firms: Machine Shops, 1962 - Continued

Name	Location
<b>Ontario - Continued:</b>	
Hamill Machine Co.	Niagara Falls
Hamilton Machine Co.	Hamilton
Hanson, T.A. Machines	Woodstock
Hansons Machine Shop, Reg'd.	Ottawa
Harnden & Newell, Limited	Timmins
Harper Machine Co.	Brantford
Harri Machine Shop	Brantford
Harris Machine Co.	Weston
Harwil Enterprise	Cathcart
Hastings R. Co. Limited	Toronto
Hawkins Machine Shop	Mitchell
Henley, A.W., Machine and Tool Co.	Don Mills
Henry's Machine Shop, Ltd.	Brockville
Hep-Sur Engineering Co.	Toronto
Hera Tool and Machine Co.	Summerville
Herculock, Limited	Niagara Falls
Hill-Cook Industries, Ltd.	Stoney Creek
Hooper & Bird Machine Shop	Orillia
Huffman Brothers	Port Hope
Humber Machine and Tool, Ltd.	Toronto
Humberstone Port Colborne Machine Works	Port Colborne
Hunter Bridge and Boiler Works	Kincardine
Hydraulic Jack and Lift Service, Ltd.	Toronto
I.X.L. Engineering Co.	Toronto
Ideal Engine Repairs	St. Catharines
Industrial Mill Supplies	Hamilton
Industrial Tool	Oshawa
J. & R. Products	Brantford
Jan-Zen Metal Industries, Limited	Toronto
Jenkins Machine and Tool Co.	Kingston
Jig Boring Specialities, Ltd.	Toronto
Jim's Machine Shop	Hensall
Johnsen's Tool and Machine Shop	Hamilton
Johnson, W.H. and Son	Barrie
Johnston and Mallough Machine Shop	Goderich
Jones Machine and Tool Co.	Toronto
Jones Tool and Machine Co.	Burlington
Kallio, Jack	Sudbury
Kawnick Automotive Engine Supply, Ltd.	Toronto
Kelco Engineering, Ltd.	London
Kelvin-Thompson Co. Ltd.	Ajax
Kendall Mfg., Limited	Windsor
Kennedy Machine Co. Ltd.	Toronto
Keough, A.E.	London
Kirkland Lake Machines and Welding, Ltd.	Kirkland Lake
Knight-Bolton Co. Ltd.	Niagara Falls
L.C.S. Metals Corp., Ltd.	Brantford
Lacelle Tool and Die Works	Beaverton
Lamont's Machine Shop	Hanover
Langs Automotive Parts	Hamilton
Lattner C.W. and Sons	Kitchener
Lawrence Engineering Co.	Preston
Leclerc Oram, Machine Shop	Hawkesbury
Leco Tool and Machine, Limited	Scarborough
Lepper F. and Son, Limited	Toronto
Lincoln Machine Shop, Ltd.	St. Catharines
Little Metal Products	Preston
Lloyd's Machine Shop	Cobourg
M. & R. Tool Co., The	West Hill
Machine Products	Toronto
Machine Specialities	Toronto
Machine Tool Service Co.	Downsview
MacLean Underfeed Stoker Co. Ltd.	West Hill
MacWood Machine Co. Ltd.	Brampton
Magna Electronics, Ltd.	Toronto
Mainline Tool and Die	Oakville
Mansion Tool and Die, Ltd.	Scarborough
Marshall Tool and Die	Lucan
Marsland Precision Equipment, Ltd.	Waterloo
Martin Brothers	St. Jacobs
Master Welding Limited	Port Credit
McCoy Machinery and Supply Co. Ltd.	Hamilton
McCrindle, A.C., Ltd.	Windsor
McDermott, L., and Associates	Scarborough
McDermott Metal Products	Hanover
McLeod and Jessiman Engineering	Port William
McMullen-Perkins, Ltd.	Ottawa
McQueen Brothers	Leamington
Mechanical Products Co.	Kingston
Micro Machine and Tool Co. Ltd.	Weston
Milton Machine Shop, Ltd.	Milton
Modern Aircraft Products, Limited	Kingsville
Modern Machine Works	Toronto
Moore's Mfg. Co.	Willowdale
N. & L. Machinery and Equipment Co.	London
National Machine Products, Ltd.	Downsview
Nelson's Machine Shop	Clinton
Nelson Precision Boring Co.	Toronto
Neo Machine, Ltd.	Hamilton
Nesbitt Engineering, Ltd.	Ottawa
Newark Tool and Machine, Ltd.	Toronto

Directory of Firms: Machine Shops, 1962 - Continued

Name	Location
<b>Ontario - Continued:</b>	
Niagara Machine Works .....	Welland
O.S. Graphic Machines .....	Toronto
Oakville Iron Works .....	Oakville
Oakwood Machine and Tool Co. ....	Toronto
Oliver, A.H. Machinery Co. ....	Orillia
Operating Brant Machine and Tool ..	Paris
Optimec .....	Toronto
Orillia Tool & Stamping, Ltd. ....	Orillia
Ottawa Machine Shop .....	Kitchener
Owen Sound Die and Engineering .....	Owen Sound
Oxford Welding and Machine Shop .....	Centerville
Page Machine Tool and Die Works, Ltd.	St. Catharines
Papazian Machine & Tool .....	Toronto
Paragon Metal Industries, Ltd. ....	West Hill
Parkdale Machine and Tool Co. ....	Burlington
Patrick-Farmer, Limited .....	Owen Sound
Patterson, P. and Sons .....	Pembroke
Payne Metal Industries, Ltd. ....	Toronto
Peerless Machine and Tool Co. Ltd, The	Guelph
Perkins, Frank, Co. ....	Prescott
Peterborough Tool and Machine Co. Ltd.	Peterborough
Pett Machine and Supply .....	Kitchener
Pokornik, F. and Son .....	Blenheim
Poole and Co. ....	Toronto
Poppleton, George, Machine Works .....	South Porcupine
Post Machine Co. ....	Toronto
Precision Engineering Co. ....	Toronto
Precision Milling Co. ....	Rexdale
Presco Mfg. Co. ....	Toronto
Prescott Machine and Welding, Ltd. ....	Prescott
Progressive Tool and Stamping Co. ....	Toronto
Pyke, Bert, Limited .....	Oshawa
Queensway Machine Products, Ltd. ....	Toronto
Quinte Machine and Repair Co. Ltd. ....	Trenton
R. & Y. Tool and Die Co. Limited .....	Fonthill
Raceway Manufacturing, Ltd. ....	Toronto
Rae and Foster, Ltd. ....	Port Credit
Rector's Machine Shop .....	Sault Ste. Marie
Redman Machine and Metallizing, Ltd. ....	London
Reliable Tool and Mfg. Co. ....	Thorold
Reliance Machine Tool Co. ....	Port Credit
Renown Specialties Co. ....	Rexdale
Replacement Unit Co. of Canada, Ltd. ....	Toronto
Richmond Machine and Tool .....	Toronto
Ridgetown Tool and Die .....	Ridgetown
Riverdale Machine and Tool Co. Ltd. ....	Scarborough
Romeo Machine Shop, Ltd. ....	Windsor
Royal City Engineering Co. ....	Guelph
Rumball, J.E., Ltd. ....	Sudbury
Sandrin Bros., Ltd. ....	Sarnia
Sauve Machine and Welding Works .....	Casselman
Scarboro Products .....	Scarborough
Schuller Machine and Tool Co. ....	Scarborough
Seaforth Machine Shop .....	Seaforth
Seward, N.A., Machine Tool Co. ....	Campbellford
Siegner Screw Machine Products .....	London
Simcoe Automotive Machine Shop .....	Simcoe
Simola, A. Diesel and Welding Service ..	Timmins
Snobelen Enterprises, Limited .....	Thamesville
Solo Motor Manufacturing, Ltd. ....	Toronto
Soo Foundry and Machine Co., Ltd. ....	Sault Ste. Marie
Special Machining Company .....	Windsor
Specialty Welding and Machine Co. Ltd. ....	Point Edward
Stalker Engineering Co. Ltd., The .....	Simcoe
Stapley, W.C. ....	Campbellford
Steel Metal Machine Shop .....	Hamilton
Swansea Machine Repair Co. ....	Swansea
Tape, Robert .....	Ottawa
Thered Machine Co. Ltd. ....	New Toronto
Thenton Hydraulic Co. ....	Toronto
Thompson Machine & Tool Co. ....	Hamilton
Thornton & Truman, Ltd. ....	Ottawa
Thorold Welding Works, Ltd. ....	St. Catharines
Thurston Machine Co. Ltd. ....	Port Colborne
Tillsonburg Machine Shop, Ltd. ....	Tillsonburg
Titan Tool and Die, Limited .....	Windsor
Tom's Machine Shop .....	Brampton
Torgis, A.L., and Son, Ltd. ....	Toronto
Toronto Automotive Machine Co. Ltd. ....	Toronto
Toronto Machine Repair Co. Ltd. ....	Toronto
Tortex Machine Works, Limited .....	Toronto
Trapp Manufacturing, Ltd. ....	St. Catharines
Trenton Machine Tool, Ltd. ....	Trenton
Triangle Die and Tool Co. Ltd. ....	St. Catharines
Tri-King Manufacturing, Ltd. ....	Toronto
Twin City Machine and Repair .....	Kitchener
Upper Canada Mfg., Ltd. ....	New Toronto
Vaillancourt Machine Shop .....	Hawkesbury
Valencourt, A., Estate .....	Welland
Viking Engine and Tool Co. Ltd. ....	Toronto



Directory of Firms: Machine Shops, 1962 - Continued

Name	Location
<b>Ontario - Concluded:</b>	
Vojin, Joseph and Son .....	West Lorne
W.L.C. Machine and Welding Co. ....	Galt
Wasco Valve Seat Company Limited .....	Essex
Waterloo Machine and Tool .....	Waterloo
Webber Gear and Machine Co. Ltd. ....	Toronto
Weeler Machine Co. Ltd. ....	Woodstock
West End Machine Shop .....	Chatham
West, R.J., Ltd. ....	Toronto
Western Engineering Service, Ltd. ....	Fort William
Wheeler Machine Shop .....	Kitchener
Whitby Metal Products .....	Whitby
Whitelaw Machinery Co. ....	Woodstock
Windsor Machine and Stamping, Ltd. ....	Windsor
Wing & Son, Limited .....	Hamilton
Wolfe Transmission, Ltd. ....	Toronto
Wright, Carl Edward, Co. ....	Oakville
Wright, Geo. A., and Son Machine Works, Ltd. ....	Kingston
Wright Machine and Tools, Ltd. ....	St. Catharines
Wunder Machine Company Ltd. ....	Kitchener
Wyebridge Machine Co. ....	Midland
Yarmouth Machine Co. Ltd. ....	St. Thomas
<b>Manitoba:</b>	
Acme Machine Works .....	Winnipeg
Astbury, Chas. B. ....	Portage la Prairie
Bowen Machinery, Ltd. ....	Winnipeg
Canada Auto Co. ....	Winnipeg
Canadian Tool and Die Works, Ltd. ....	Winnipeg
Capital Welding and Machine Works .....	Winnipeg
Craftsman Machine Co. ....	Winnipeg
Crescent Electric and Machine Works .....	Winnipeg
Darragh Machine Works .....	St. Boniface
Dauphin Machine Works .....	Dauphin
Donalds' Machine Shop .....	Old Kildonan
Erin Welding Co. ....	Winnipeg
Fork River Machine Shop .....	Fork River
Friesen Machine Shop .....	Steinback
Hanover Machine Works .....	Steinback
Hansen's, Carl, Machine Shop .....	Winnipeg
Joe's Machine Shop .....	St. Boniface
Johnson Bros. Mfg., Ltd. ....	St. Boniface
Kunec Machine Works .....	Winnipeg
Lechner, A. & J. ....	Morden
Logan Machine Works .....	Winnipeg
Manitoba Bearing Works, Ltd. ....	Winnipeg
Manitoba Welding Machine Works .....	Winnipeg
Mechanical Welding Co. Ltd. ....	Winnipeg
Microdor of Canada, Ltd. ....	Winnipeg
Micron Diesel, Limited .....	Winnipeg
Muzeen and Blythe, Ltd. ....	Winnipeg
Neepawa Machine Works .....	Neepawa
Piston Ring Service Supply, Ltd. ....	Winnipeg
Precision Machine and Steel Works .....	Brandon
Precision Machine Works, Ltd. ....	Winnipeg
Pritchard Engineering Company Ltd. ....	Winnipeg
Riverside Machine Shop .....	Morris
Selkirk Machine Works .....	Selkirk
Shefrin Welding and Iron Works. ....	St. James
Shepherd Machine Tool and Die Works, Ltd. ....	Winnipeg
Sommers, F., Mfg. Co. Ltd. ....	Winnipeg
Standard Machine Works, Ltd. ....	Winnipeg
Star Machine Shop .....	East Kildonan
Sterling Engine Works, Limited, The .....	Winnipeg
Thor Machine Co. Ltd. ....	Winnipeg
Universal Machine and Engineered Products, Ltd. ....	Winnipeg
Western Engine Works, Ltd. ....	St. James
Western Machine Works .....	Winnipeg
<b>Saskatchewan:</b>	
Acme Machine and Electric Co. ....	Saskatoon
Automotive Machine and Supply Co. Ltd. ....	Moose Jaw
Beeler's Machine Shop .....	Nokomis
Davis Machine Co. Ltd. ....	Saskatoon
Estevan Machine Shop .....	Estevan
Hall's Machine Shop .....	Shaunavon
Houser's Machinery and Welding .....	Melville
Jacklin, Stan E., Welding Products .....	Nipawin
McIntyre Manufacturing Co. Ltd. ....	Swift Current
Melfort Machine and Welding .....	Melfort
Motive Machine Works .....	Regina
Ornamental Iron Works .....	Regina
Oxbow Machine Shop .....	Oxbow
Pascoe's Machine Works .....	Moose Jaw
Peebles Machine Shop .....	Yorkton
Peters Machine Service .....	Saskatoon
Railway Ave. Repairs .....	Weyburn



Directory of Firms: Machine Shops, 1962 - Continued

Name	Location
<b>Saskatchewan - Concluded:</b>	
Regina Electric and Machine Co. Ltd.	Regina
Swanson Industries Ltd.	Saskatoon
Tractor Boneyard	Regina
Venables Machine Works	Saskatoon
Western Machine Shop	Melfort
Weyburn Iron Works	Weyburn
<b>Alberta:</b>	
Able Machine Works (Edmonton) Ltd.	Jasper Place
Acro Machine and Specialty, Ltd.	Calgary
Alberta Oil Tool Co. Ltd.	Edmonton
Alco Machine Works, Ltd.	Edmonton
Alert Machine & Fabricating Co. Ltd.	Edmonton
Andersen A., Metalcraft, Ltd.	Edmonton
Argus Machine Co. Ltd.	Edmonton
Barber Machinery, Limited	Calgary
Barber Machinery, Ltd.	Edmonton
Barnie's Engine Service	Edmonton
Bartman's Machine Shop	Hanna
Bennett & Emmott, Limited	Edmonton
Byer's Machine Shop	Edmonton
Camrose Engineering and Machine Co.	Camrose
Canadian Equipment Sales and Service Co. Ltd.	Edmonton
Central Hydraulic Manufacturing Co.	Edmonton
Consort Machine Shop	Consort
Cromdale Machine Works, Ltd.	Edmonton
Curtis Hoover, Ltd.	Edmonton
Cutler Manufacturing Company Ltd.	Calgary
Dahl, G. and Sons, Ltd.	Camrose
Dick's Machine Co. Ltd.	Camrose
Diro Machine and Steel Co.	Calgary
Drumheller Iron Works	Drumheller
Electric Machine Service	Edmonton
Gilchrist Engineering (Alberta), Ltd.	Edmonton
Gleave Machine Ltd.	Stettler
Harrison's Machine Shop	Lacombe
Hayden's Machine Shop	Longview
Hunt Welding Services	Lethbridge
H-Way Machine Shop	Alix
Independent Machinery, Ltd.	Calgary
Industrial Machine Shop, Ltd.	Edmonton
Irma Machine Works	Irma
Jackson's Machine Shop	Three Hills
Jackson's Welding (Calgary), Ltd.	Calgary
Kirk's Metallizing Works, Ltd.	Edmonton
Lennox Welding and Supply, Ltd.	Edmonton
Lethbridge Industries, Ltd.	Lethbridge
Liberty Machine Works, Ltd.	Edmonton
Linden Machine Works, Ltd.	Linden
McKinney Machine Company, Ltd.	Edmonton
McLennan and Rooks	Vermilion
Medicine Hat Iron Works	Medicine Hat
Morinville Machine Shop	Morinville
Moro Machine Shop	Peace River
Mottus W. Machine Shop	Rocky Mountain House
Mount View Machine Co. Ltd.	Calgary
Niven Bros.	Lethbridge
North Edmonton Iron Works	Edmonton
North Red Deer Welding Shop	Red Deer
Oilfield Specialty Welding, Ltd.	Edmonton
Oilwell Machine Co.	Turner Valley
Oxford Machine and Welding Co. Ltd.	Edmonton
Paragon Machine Co.	Calgary
Paramount Industries, Ltd.	Edmonton
Pepper Bros., Ltd.	Drumheller
Red Deer Iron Works	Red Deer
Rice Machine Service, Ltd.	Calgary
Saskatoon Welding and Machine, Ltd.	Edmonton
Steel Industries of Grande Prairie, Ltd.	Grande Prairie
Tappenden, Fred S., Ltd.	Edmonton
Taylor, Pearson and Carson (Edmonton) Ltd.	Edmonton
Tofield Farm Equipment	Tofield
Valley Tool and Machine Co.	Calgary
Volk Machine Shop, Ltd.	Calgary
Warren Machine Works	Delburne
Western Hard-Chrome Plating Co. Ltd.	Edmonton
Western Hydraulic and Machine, Ltd.	Edmonton
<b>British Columbia:</b>	
A & B Machine Works	Victoria
Abbotsford Machine Repairs	Abbotsford
Adams, Ray, Machine Works, Ltd.	New Westminster
Alberni Engineering & Shipyard, Ltd.	Port Alberni
Anderson Engineering	Langley
Ansell Machine	Vancouver
Argyle Machine Works, Limited	Port Alberni

Directory of Firms: Machine Shops, 1962 - Continued

Name	Location
<b>British Columbia—Continued:</b>	
Arm, W. F., Machine Works, Ltd.	Vancouver
Armstrong Machine Shop, Ltd.	Armstrong
B.C. Nubuilt Castings, Ltd.	Vancouver
B.C. Motor Rebuilders, Ltd.	Vancouver
Bohn's Machine Shop	Union Bay
Bowler Bros. Machine Shop, Ltd.	Aldergrove
Brinkhurst Machine Products	Vancouver
Broadway Welding Shop, Ltd.	Vancouver
Brunette Machine Works, Ltd.	New Westminster
Burke Machine Works, Ltd.	Vancouver
Cache Creek Machine Shop	Cache Creek
Campbell River Welding and Machine Works	Campbell River
Cannon Machine Works, Ltd.	Vancouver
Capilano Engineering Co. Ltd.	Vancouver
Cariboo Drives and Bearing Sales, Ltd.	100 Mile House
Carter Machine Works, Ltd.	New Westminster
Cascade Saw and Tool Co. Ltd.	New Westminster
Cassidy Industrial Engineering, Ltd.	Vancouver
Central Machine Shop	Penticton
Chapman Motor and Machine Shop, Ltd.	Vancouver
City Welding and Machine Shop, Ltd.	Chilliwack
Coleman Machine Works, Ltd.	Quesnel
Columbia Machine Works, Ltd.	Vancouver
Coulter and March Machine Shop Ltd.	Ladner
Courtenay Machine Shop, Ltd.	Courtenay
Cowie Machine Co. Ltd.	Nanaimo
Cylinder Grinders, Ltd.	Vancouver
Dafoe, V.M.	Vancouver
Dawson Creek Industries	Dawson Creek
Derrick Machinery Co. Ltd.	Fort St. John
Duncan Iron Works, Ltd.	Duncan
Durand Machine Works (1957) Ltd.	New Westminster
Earl's Machine Shop	Vancouver
Easthope Bros., Ltd.	Steveston
Ehco Manufacturing, Co. Ltd.	Vancouver
Ecker, R., Machine Works	Osoyoas
Elto Industries	Vancouver
Fort Machine Shop	Fort St. James
Gillen and Pike Machine Works	Vancouver
Glendale Machine Shop, Ltd.	Williams Lake
Grove's Machine Shop	Burnaby
Hafer Brothers	Victoria
Hafer Machine Co. Ltd.	Victoria
Harjim Machine Works, Ltd.	Victoria
Harvey's Machine Shop	Oliver
Heatley Machine Works, Ltd.	Vancouver
Hill's Machine Shop, Ltd.	Gibsons Landing
Hope Machine Shop	Hope
Hope Manufacturing Co. Ltd.	Vancouver
Humphrey, Art. Ltd.	Burnaby
Hydraulic Service and Equipment Co. Ltd.	Vancouver
Ideal Iron Works, Limited	Vancouver
International Drills (1955), Ltd.	Vancouver
Kasio Machine Shop	Kaslo
Kelowna Steel Fabricators, Ltd.	Kelowna
Langley Welding and Machine Shop	Langley
Littler and Sons Iron Works, Ltd.	Vancouver
Lund Machine Shop	Lund
Marpole Machine Works, Ltd.	Vancouver
Massey's Machine Shop, Ltd.	Ladner
Master Machine Co. Ltd.	Vancouver
McConnell Machine Shop, Ltd.	Burns Lake
Modern Engineering Co. Ltd.	Vancouver
Mooney Machine Works	North Vancouver
Morrison Welding and Supply, Ltd.	Nanaimo
Murray-Latta Machine Co. Ltd.	Vancouver
Muth, R. and Sons Machine Shop	Albion
Nanaimo Foundry and Engineering Works, Ltd.	Nanaimo
National Shops, Ltd.	Vancouver
Newnes Machine and Iron Works, Ltd.	Salmon Arm
Nielson Machine Works, Ltd.	Vancouver
Narco Machine Work, Ltd.	North Kamloops
North Arm Machine, Ltd.	New Westminster
Okanagan Equipment Limited	Vancouver
Okanagan Equipment, Limited	Vernon
Olmstead's Machine Shop	Campbell River
Paragon Equipment Mfg. Co. Ltd.	Vancouver
P. & J. Machine Shops, Ltd.	Athlmer
Pendozl Machine Shop	Kelowna
Penticton Engineering Works, Ltd.	Penticton
Pinchbeck, F.W.	Kamloops
Plant Service	Vancouver
Port Machine Works	Port Alberni
Powell Machine Works, Ltd.	Mission City
Prince George Welding and Machine Works Co. Ltd.	Prince George
Quality Machine and Motor Service Ltd.	Vancouver
R. & S. Machine Works, Ltd.	Vancouver
Ramsay Machine Works, Ltd.	Victoria
Reekie's Machine Shop	Cranbrook
Reliance Motor & Machine Works, Ltd.	Vancouver

Directory of Firms: Machine Shops, 1962 - Concluded

Name	Location
<b>British Columbia - Concluded:</b>	
Richards Engineering Company Ltd. ....	Vancouver
Rosedale Machine Shop, Ltd. ....	Rosedale
Salmon Arm Machine Shop ....	Salmon Arm
Sig's Machine Shop & Sales. ....	Vancouver
Smith Industries (1958) Ltd. ....	Vancouver
Smyth Machine Shop ....	Princeton
Specialty Machine Shop Ltd. ....	Vancouver
Standard Machine Shop, Ltd. ....	Prince Rupert
Stevenson Machinery, Ltd. ....	Nelson
Stewart Bros. Repair Shop ....	Nelson
Surrey Engineering Co. ....	North Surrey
Tofino Marine Service, Ltd. ....	Tofino
Trail Machine Works ....	Trail
Trail Sales and Machine, Ltd. ....	Trail
United Engineering Works, Ltd. ....	Victoria
Valley Welding and Machine Shop ....	Chilliwack
Vernon Machine and Equipment, Ltd. ....	Vernon
Viking Mfg. Co. Ltd. ....	Vancouver
Wallace Machine and Manufacturing Co. Ltd. ....	Vancouver
Warner Machine Shop ....	New Westminster
Welding and Construction Co. Ltd. ....	Vancouver
Welsh R.L., Ltd. ....	Vancouver
Western Machine Works, Ltd. ....	Vancouver
Westview Machine Shop, Ltd. ....	Powell River
White Bros. Machining and Mfg. Co. ....	Courtenay
Whitehouse Machine Shop ....	Sidney
Williams Lake Machine Shop ....	Williams Lake
Williams & White Machine Shop, Ltd. ....	S. Burnaby
Windsor Machine Co. Ltd. ....	Vancouver



## 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.<sup>1</sup>

(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.<sup>1</sup>

<sup>1</sup> 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.

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.



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.<sup>2</sup> 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.<sup>3</sup>

(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.

<sup>2</sup> 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.

<sup>3</sup> 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 establishments<sup>4</sup> 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

<sup>4</sup> 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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