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# AIRCRAFT AND PARTS MANUFACTURERS

1964

## ANNUAL CENSUS OF MANUFACTURES

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## DOMINION BUREAU OF STATISTICS

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## PUBLICATIONS

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For statistical purposes the industry titled Aircraft and Parts Manufacturers in the the revised Standard Industrial Classification covers the operations of establishments primarily engaged in manufacturing aeroplanes, gliders, balloons and aircraft parts, such as engines, propellers and pontoons. Aircraft repair is included in this industry. The manufacture of aeronautical instruments is classified in Industry No. 381-Scientific and Professional Equipment Manufacturers.

In total there were two less firms included in this industry in 1964, however the real change involved the addition of 13 firms and the deletion of 15 firms.

The value of shipments of products of own manufacture and materials used in their manufacture increased by 11%, value added on products of own manufacture increased by 12% and employment during the year increased by 7.5%.

Note: The Aircraft and Parts Manufacturers Industry is one of the industries in the Annual Census of Manufactures reporting on a "Production" basis rather than a "Shipments" basis - see the section on "Shipment of goods of own manufacture", in "Explanatory Notes" at the end of this report.

## SYMBOLS

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

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

1				Man	ufacturing	activity				Т	'otal activ	rity	
Year and	Estab- lish-		duction a ated work		Cost of	Cost of	Value of shipments			g owners artners	Emp	oyees	
province	ments	Number	Man- hours paid	Wages	fuel and elec- tricity	materials and supplies	of goods of own manu- facture	Value added	Number	With- drawals	Number	Salaries and wages	Value added
	No.		'000			\$'000	L			\$*000		\$*0	00
1961													
Totals	80	19, 249	41, 278	87,825	3,016	161, 345	348, 245	188,946	5	21	28,689	143, 333	196, 55
1962													
Totals	83	17,917	38, 393	83,070	3, 169	184, 741	381, 234	189,668	8	32	27,665	137,981	192, 7
									(				
1963										;			
Yewfoundland	_		-	-	-	-	-	-	-	-	-	-	
Prince Edward Island	1	864	1,785	3, 456	141	1,438	7,308	5,728	x	x	1,060*	4.347 <sup>r</sup>	5,9
Vova Scotia	3	5		0,100					•	~			
New Brunswick	-	-	-	-	_	-	_	-	-	-	-	-	
Quebec	23	7,238	16,283	36,096	1,477	76,615	172, 589	97,981	x	x	12,401	68,684	98,4
Ontario	35	6,878	14, 255	32,884	1,431	89,388	159,337	68,676	3	8	10,650	55,868	71,1
Manitoba	3	1					1.1.1						
Saskatchewan	1	608	1,225	2,556	81	3, 946	9,635	5,609	x	x	1,027	4,600	6,4
Alberta	12	740	1,480	3,373	57	1,439	7,423	5,997	3	17	992	4,694	6,3
British Columbia	10	188	378	1,037	55	2, 200	4,302	2,326	-	-	287	1,613	2, 3
Yukon and Northwest Territories	_	_	_		_	_	_	-	_	-	_	_	
Totals	88	16,516	35, 405	79, 402	3, 242	175,024	360, 594	186, 317	10	39	26,417	139,806"	190, 6
1964													
Newfoundland	_	_	_	_	_	-	_	-	-	-	_	-	
Prince Edward Island	1	1											
Nova Scotia	3	838	1,831	3,657	155	1,783	8,971	7,033	_	_	1,034	4,641	6,9
New Brunswick	1												
Quebec	24	7,813	16,796	38,863	1,338	94, 327	191,583	97,890	x	x	13, 209	75,832	105,0
Ontario	35	8,124	17,058	42,395	1,466	89,255	184, 575	94,364	5	18	12,508	69,654	96,1
fanitoba	2	1											
Saskatchewan	1	1,076	2,361	4,922	159	6,692	16,270	9,419	x	x	1,709	8,003	9,9
Alberta	10												
British Columbia	9	103	215	560	28	1, 144	2,377	1,204	-	_	183	1,019	1, 2
Yukon and Northwest Territories	_	-	-	-	-	-	_	-	-	-	-	-	
Totais	86	17,954	38, 262	90, 398	3, 146	193, 201	403, 776	209,911	10	44	28,643	159, 150	219, 3

TABLE 2. Principal Statistics of	classified by Size Group based on	Value of Shipments of Goods of	Own Manufacture, 1963 and 1964
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				Man	ufacturing	activity				Т	'otal acti-	vity	
Size group	Estab- lish- ments		duction a ated work		Cost of fuel and	Cost of materials	Value of shipments of goods	Value	Working and pa	owners utners	Emp	loyees	Value
		Number	Man- hours paid	Wages	elec- tricity	and supplies	of own manu- facture	added	Number	With- drawals	Number	Salaries and wages	added
1963	No.		*000			\$*000				\$'000	Ē	\$*(	000
Under \$10,000 \$ 10,000 to \$ 24,999 50,000 '' 99,999 100,000 '' 199,999 200,000 '' 199,999 500,000 '' 999,999 500,000 '' 4,999,999 5,000,000 and over Head offices, sales offices and auxiliary units Totals	<pre></pre>	8 24 156 178 320 3,665 12,111	16 49 111 319 372 662 7,878 25,997  35,405	28 93 219 684 663 1,478 16,842 59,396  79,402	2 5 11 22 32 66 66 2,439  3,242	37 135 326 650 781 2,763 21,175 149,156  175,024	106 362 683 1,764 2,254 5,767 54,871 294,786  360,594	68 241 404 1.118 1.453 3.336 32.843 146,854  186,317	7 1 2 - - - - - - 10	18 11 9 	9 36 71 202 230 518 5,289 <sup>r</sup> 20,039 23 23 <b>26,417<sup>r</sup></b>	32 140 307 930 1,003 2,608 25,754 108,833 202 139,806	104 272 405 1,116 1,754 3,835 34,667 148,503 (19 190,636
1964 Under \$10,000 \$ 10,000 to \$ 24,999 50,000 '' 49,999 100,000 '' 199,999 200,000 '' 499,999 500,000 '' 499,999 1,000,000 '' 4,999,999 1,000,000 '' 4,999,999 5,000,000 and over Head offices, sales offices and auxiliary units	<pre>} 11 3 13 5 16 9 18 11</pre>	16 59 55 334 302 2,612 14,561	30 10 138 121 714 678 5,707 30,863	50 21 311 237 1,610 1,511 12,398 74,260	5 1 17 10 61 73 484 2,496	63 35 272 300 1,334 3.058 20,995 167,144	191 118 896 7777 4,369 6,598 48,233 342,593	123 83 606 467 2,982 3,485 26,824 175,340	6 3 1 	18 18 9 	26 93 75 452 581 4,005 23,391 14	78 30 446 347 2. 325 3. 074 20. 605 132. 073 171	146 83 721 466 3,125 4,875 28,332 181,586 (12
Totals	86	17,954	38,262	90,398	3,146	193,201	403,776	209,911	10	44	28,643	159, 150	219, 322

TABLE 3. Principal Statistics classified by Size Group based on Manufacturing Value Added, 1963 and 1964

				Mar	ufaciuring	aciivity				1	fotai acti	vity	
Size group	Estab- lish- ments		ated work		Cost of fuel and	Cost of materials	Value of shipments of goods	Value		owners artners	Emp	loyees	Value
		Number	Man- hours paid	Wages	elec- tricity	and supplies	of own manu- facture	added	Number	With- drawals	Number	Saiaries and wages	added
	No.		'000			\$'000				\$'000		\$*(	000
1963								1					
Under \$10,000	7 55 15 6 12 8 10 18 7	7 12 70 52 212 259 624 3,957 11,323	14261461074215371,4758,29924,379	25 49 296 221 889 1.017 3.091 17,739 56,076	2 2 15 9 35 51 163 696 2,268	30 130 494 272 806 2,298 5,343 25,084 140,567	85 228 970 662 2,542 4,725 12,362 62,071 276,950	54 102 530 401 1,710 2,501 7,153 36,089 137,778	712	18 11 9 	7 19 94 64 280 429 963 5,812 <sup>r</sup> 18,726	25 76 409 280 1,275 1,960 5,346 27,698 <sup>r</sup> 102,536	90 132 529 401 2,013 3,004 7,741 38,474 138,271
auxiliary units				4.4.4					* * *		23	202	(19)
Totals	88	16,516	35,405	79, 402	3,242	175,024	360,594	186,317	10	39	26, 417 <sup>r</sup>	139, 806 <sup>r</sup>	190,636
1964													
Under \$10,000 \$ 10,000 to \$ 24,999 25,000 ** 49,999 50,000 ** 99,999 200,000 ** 199,999 200,000 ** 499,999 500,000 ** 4,999,999 1,000,000 ** 4,999,399 5,000,000 and over Head offices, sales offices and auxiliary units	3 11 8 9 14 11 6 17 7	3 25 30 90 202 362 494 3,665 13,083	5 49 60 192 425 797 1,207 8,043 27,484	7 86 122 408 968 1,782 2,700 17,649 66,676	$1 \\ 7 \\ 9 \\ 24 \\ 46 \\ 68 \\ 92 \\ 724 \\ 2,175 $	19 108 175 408 1,570 2,642 2,729 29,905 155,645	40 274 505 1,067 3,586 6,493 7,873 68,339 315,598	20 159 321 635 2,028 3,751 5,153 37,678 160,165	277	9 27 9 1 1	7 33 47 109 344 592 741 5,476 21,280 14	17 110 202 541 1,705 3,170 4,275 27,859 121,100 171	43 249 346 633 2,397 4,582 6,663 38,215 166,207 (12)
Totals	86	17,954	38, 262	90,398	3,146	193,201	403, 776	209,911	10	44	28,643	159, 150	219,322

				Man	ufacturing	activity			12	Т	otal activ	víty	
Size group	Estab- lish-		oduction lated work		Cost of	Cost of	Value of shipments	** 5		owners artners	Empioyees		Value
	ments	Number	Man- hours paid	Wages	fuel and elec- tricity	materials and supplies	of goods of own Manu- facture	Value added	Number	With- drawals	Number	Salaries and wages	Value added
	No.		*000		L	\$*000				\$'000		\$'0	000
1963				-									1
Under \$10,000 \$ 10,000 to \$ 24,999 25,000 '' 49,999 100,000 '' 199,999 200,000 '' 199,999 500,000 '' 499,999 500,000 '' 499,999 5,000,000 and over Head offices, sales offices and	6 4 17 6 11 9 11 17 7	4 11 74 52 167 325 671 3,889 11,323	8 23 155 107 335 703 1,569 8,126 24,379	14 45 312 221 741 1,261 3,341 17,392 56,076	2 2 15 9 23 53 187 682 2,268	18 93 543 272 661 2,246 6,992 23,632 140,567	61 178 1,043 662 2,232 5,163 14,699 59,607 276,950	42 90 555 401 1,558 2,914 7,888 35,092 137,778	712	18 11 9	4 15 101 64 224 456 1,123 5,681 <sup>r</sup> 18,726	14 61 435 280 1,094 2,093 6,007 27,085 102,536	42 89 62i 401 1,557 3,372 8,810 37,493 138,271
auxiliary units											23	202	( 19
Totals	88	16,516	35, 405	79,402	3, 242	175,024	360, 594	186, 317	10	39	26, 417*	139,806*	190,636
1964													
Under \$10,000 \$ 10,000 to \$ 24,999 55,000 '' 49,999 100,000 '' 199,999 200,000 '' 499,999 550,000 '' 499,999 5,000,000 and over 5,000,000 and over Baad offices, sales offices and auxiliary units	2 11 7 10 13 11 5 20 7	<pre>} 18 21 99 175 333 279 3,946 13,083</pre>	34 42 210 378 712 677 8.725 27,484	57 83 447 845 1,661 1,413 19,216 66,676	6 5 28 38 61 49 784 2,175	92 160 423 952 2,468 2,005 31,456 155,645	263 440 1,132 2,674 5,905 5,065 72,700 315,598	165 275 881 1.684 3.429 2.983 40.529 160,165	9	36 9 	28 34 122 225 574 453 5,913 21,280 14	86 142 601 1,161 3,014 2,518 30,359 121,100 171	187 275 704 1,773 3,861 3,825 42,502 166,207 (12
Totals	86	17,954	38, 262	90,398	3, 146	193, 201	403,776		10	44	28,643	159, 150	219, 322

## TABLE 4. Principal Statistics classified by Size Group based on Total Value Added, 1963 and 1964

## TABLE 5. Principal Statistics classified by Size Group based on Total Employed, 1963 and 1964

	4			Mai	ufacturing	activity	-				Fotal act	ivity	
Size group	Estab- lish- ments		oduction lated work		Cost of	Cost of	Value of shipments	** = l		Working owners and partners		Employees	
	шентв	Number	Man- hours paid	Wages	fuel and elec- tricity	materials and supplies	of goods of own manu- facture	Value added	Number	With- drawals	Number	Salaries and wages	Value added
1963	No.		'000			\$'000	1			\$'000		\$*0	000
Under 5 employed	16 17 16 10 9 11 9	26 105 335 426 855 2,449 12,320	53 220 708 981 1,933 5,071 26,438	96 452 1,423 1,928 4,195 11,026 60,282	7 19 45 129 181 452 2,409	213 711 1,969 4,079 7,371 17,991 142,691	470 1,492 4,970 9,231 16,029 41,224 287,179	281 813 3.022 5.122 8.735 22.601 145.742	82	29 9	37 137 442 744 1,265 3,614 20,155	137 616 2,106 3,852 6,535 17,471 108,888	348 812 3,018 6,280 9,470 23,722 147,005
Totals	88	16,516	35, 405	79,402	3, 242	175,024	360, 594	186,317		39	23 26,417	202 139,806 <sup>*</sup>	(19) 190,636
1964													
Under 5 employed	17 13 19 8 11 9 9	29 76 352 310 1,127 2,029 14,029	56 158 791 661 2,601 4,282 29,713	106 359 1,825 1,391 5,747 9,515 71,454	7 18 78 59 199 465 2,320	171 437 2,460 2,146 9,364 16,921 161,702	527 1,180 6,016 5,343 22,167 37,031 331,511	349 725 3,445 3,196 12,705 19,614 169,877	9	36 9 	41 108 471 582 1.662 3.101 22.664	164 504 2,641 2,853 8,991 15,660 128,167	349 861 3,522 4,311 13,973 20,059 176,260
auxiliary units					* * *	P P 4			4 * X		14	171	(12)
Totals	86	17,954	38, 262	90, 398	3, 146	193, 201	403,776	209,911	- 10	44	28,643	159, 150	219, 322

				Man	ufacturing	activity				1	Fotal acti	vity	
Type of organization	Estab- lish-		oduction ated work		Cost of	Cost of	Value of shipments		Working and pa		Empl	oyees	
organization	ments	Number	Man- hours paid	Wages	fuel and elec- tricity	materials and supplies	of goods of own manu- facture	Value added	Number	With- drawals	Number	Salaries and wages	Value added
	No.		'000			\$'000				\$'000		\$'0	00
1963													
Individual ownerships Partnerships	9	18	36	63	6	87	225	138	10	39	19	66	138
Incorporated companies	79	16,498	35,369	79, 339	3,236	174,937	360, 369	186,180			26,375	139,539	190,517
Co-operatives	- 1	—	-	-		-	ativity	-			_	-	-
Head offices, sales offices and auxiliary units											23	202	( 19)
Totals	88	16,516	35,405	79,402	3, 242	175,024	360, 594	186, 317	10	39	26, 417 <sup>r</sup>	139, 806 <sup>r</sup>	190,636
1964													
Individual ownerships	} 8	15	28	53	5	86	254	163	10	44	15	53	163
Incorporated companies	78	17,939	38,234	90,345	3,141	193, 115	403, 521	209,748			28,614	158,926	219, 171
Co-operatives Head offices, sales offices and auxiliary units						· * *	4				14	171	(12)
Totals	86	17,954	38,262	90, 398	3, 146	193, 201	403,776	209, 911	10	44	28,643	159, 150	219, 322

## TABLE 6. Principal Statistics classified by Type of Organization, 1963 and 1964

TABLE 7. Calculation of Output, Input and Value Added, 1963 and 1964

	Manufact activi		Non-manufa activiti		Tota activi	
	1963	1964	1963	1964	1963	1964
			\$'000			
Output			1			
. Shipments and other revenue	360,594	403,776	34,583	35,753	395, 177	439, 528
Inventories-Goods of own manufacture:						
Add closing - Goods in process	-	-				-
Finished goods	12,854	13, 467			12,854	13, 467
Deduct opening-Goods in process	-	-			-	-
Finished goods	8,864	10, 985			8,864	10, 983
. Net inventory change	3,990	2,482			3,990	2,482
3. Gross output (1+2)	364,584	406,258	34,583	35,753	399, 167	442,010
Input						
Purchases of goods not of own manufacture			24,719	23, 804	24,719	23,80
Inventories - Goods not of own manufacture:						
Add opening			8,122	6,717	8,122	6,71
Deduct closing			5,571	7,833	5,571	7,83
. Cost of goods sold (not of own manufacture)	* * *		27,270	22,688	27, 270	22,68
Materials, supplies, etc.	175.024	193, 201	2,994	3,654	178,018	<b>196,</b> 85
Fuel and electricity	3,242	3,146			3, 242	3,14
Gross input (5 + 6 + 7)	178,266	196,347	30,264	26,342	208, 530	222,68
Value added (3 - 8)	186, 317	209,911	4,319	9, 411	190, 636	219, 32

TABLE 8.	<b>Employment</b>	and Payroll,	1963 and	1964
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					Employ	vees						Salari	es and wa	iges	
Year		Product. related		_	Admi			les	To	tal	Producti	on and	Admin-	Sales	
and province	Manufa	cturing	0	ther	trat and o		distri	nd bution	10	HC BLI	related w	vorkers	istra- tive and	and distri-	Total
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Manufac- turing	Other	office	bution	1.
		6			numb	er							\$'000	1200	-
1963		1		1						1		1			
Newfoundland	-	-	-	-	-	-	-	-	-	-	-	-	-		-
Prince Edward Island Nova Scotia	} 859	5	-	-	115	81"	-	-	974	86	3,456	-	892"	-	4,347
New Brunswick	-	-		-	-	-	-	-	-	-	-	-	-	-	
Quebec	7,030	208	123	63	3,860	936	127	54	11,140	1,261	36,096	861	30, 574	1,153	68,684
Ontario	6,661	217	89	33	2,557	926	136	31	9,443	1,207	32, 884	632	21,295	1,058	55,888
Manitoba Saskatchewan	600	8	-	-	261	116	30	12	691	136	2,556	-	1,870	175	4,600
Alberta	720	20	-	-	163	89	-	-	883	109	3,373		1,320	-	4,694
British Columbia	187	1	-	-	72	27	-	-	259	28	1,037	_	575		1,613
Yukon and Northwest Terri- tories	whente	-	- 1	-		-	-	_	-	-	-	_	-	-	-
Totals	16.057	459	212	96	7.028	2, 175	293	97	23,590	2,827	79,402	1,493	56, 526	2,385	139, 806
															Constant (
1964				-											
Newfoundland	-	-	-	-	-	-	-	-	-	-		-	-	_	-
Prince Edward Island	1							1.1							
Nova Scotia	830	8	_	-	119	77	_	_	949	85	3,657	_	983	-	4,640
New Brunswick	J														
Quebec	7,538	275	217	60	3,969	993	109	48	11,833	1,376	38,863	1,370	34,505	1,095	75,833
Ontario	7,908	216	123	31	3,081	956	157	36	11,269	1,239	42,395	766	25,154	1,339	69,854
Manitoba	1		1.1										1.1		
Saskatchewan	1,058	18	-	-	416	169	38	12	1,510	199	4,922	-	2,852	229	8,003
Alberta	1				-										
British Columbia	103	- 1	12		51	17	-		166	17	560	60	399	-	1,019
Yukon and Northwest Terri- tories	_		~	-	-	-	- 1	-	-	-	L L L	-	-	-	-
Totals	17.437	517	352	91	7,636	2,212	302	96	25, 727	2,916	90, 398	2, 196	63, 893	2,662	159, 150

## TABLE 9. Production and Related Workers, - Manufacturing Activity, 1963 and 1964

	196	33	196	4
Month	Male	Female	Male	Female
		numb	er	
Establishments reporting monthly detail (large establishments only):		1	1	
January	15,483	426	16,690	514
February	15,390	424	16,871	518
March	15,219	442	17,048	517
April	15,173	453	16,924	508
May	15,263	419	17,093	507
June	15,366	426	17,553	520
July	15,211	431	16,864	496
August	15,307	447	17,302	500
September	15,749	453	17,212	488
October	16,176	460	17,223	489
November	16,451	455	17,291	493
December	16,818	468	17,128	475
Averages	15,634	446	17,100	503
Ratablishments reporting annual averages (small establishments only)	423	13	337	14
Average for all establishments	16,057	459	17,437	517

## TABLE 10. Inventories, 1964

Province		Manufa	Non- manufacturing			
	Materials, supplies, etc.	Goods in process	Finished goods of own manufacture	Total	Products or materials purchased for resale	Total inventories
	book value \$'000					
Opening:						
Newfoundland	-	-	-	-	-	-
Prince Edward Island						
Nova Scotia	269	515	-	784		784
New Brunswick	J					
Quebec	8,800	18,447	9,800	37,047	5,790	42,837
Ontario	12,939	5,150	1,185	19,274	927	20, 201
Manitoba	1					
Saskatchewan	1,956	1,276	-	3,232	-	3,232
Alberta	IJ					
British Columbia	585	941	-	1,526	-	1,526
Yukon and Northwest Territories	-	-		-	-	
Totals	24,548	26,328	10, 985	61, 862	6, 717	68, 579
Closing:						
Newfoundland	-	-		-	-	-
Prince Edward Island	1					
Nova Scotia	245	29	-	274		274
New Brunswick	J					
Quebec	9,763	8,475	11,772	30,009	6,299	36,308
Ontario	24,837	9,323	1,696	35,856	1,534	37,390
Manitoba	1					
Saskatchewan	2,319	1,495	-	3,813	_	3,813
Alberta						
British Columbia	397	850	-	1,247	_	1,247
Yukon and Northwest Territories	-	-	-	-	-	-
Totals	37, 561	20, 172	13,467	71,200	7,833	<b>79, 0</b> 33

## TABLE 11. Purchased Fuel and Electricity Used in Manufacturing Activity, 1963 and 1964

Description		1963		1964	
		Quantity	Cost	Quantity	Cost
<ol> <li>Large establishments reporting commodity detail: Bituminous coal:</li> </ol>			\$'000		\$'000
(a) From Canadian mines	ton	8,287	87	7,487	78
(b) Imported	**	8,347	96	8,492	105
Sub-bituminous coal (from Alberta mines only)	11	504	8	295	6
Anthracite coal	+4	-	-	-	-
Lignite coal	12	-	-	-	-
Coke		trus	-	-	_
Gasoline (including gasoline used in cars and trucks) It	mp. gal.	1,989,691	377	2,041,966	38
Fuel oil including kerosene or coal oil	1.2	11,734,107	1,055	9,762,241	76
Wood	cord	-	-	-	
Gas:					
(a) Liquefied petroleum gases	mp. gal.	47,758	11	33, 529	
(b) Other manufactured gas	M cu. ft.	1,130	1	-	
(c) Natural gas	4.6	202,462	116	294,651	14
Other fuel			4		3
Electricity purchased	kwh.	143,428,902	1,378	168,066,384	1,50
Steam purchased			40		5
. Smail establishments not reporting commodity detail:					
Estimate for fuel and electricity			69		61
. All establishments:					
Total fuel and electricity used			3.242		3.140

### TABLE 12. Materials and Supplies - Manufacturing Activity, 1963 and 1964

Decemintian	1963		1964	
Description	Quantity	Cost	Quantity	Cost
		\$'000		\$'000
1. Ail materiais and components used <sup>1</sup>		152, 045		168, 644
2. Containers and other packaging materials and supplies used		653		718
3. Operating, maintenance and repair supplies used (excluding fuel)	1	13, 214		15, 857
4. Amount paid out to others for work done on materials owned by establishments		9, 111		7,983
Totals		175, 024		193, 201

<sup>1</sup> No detailed information on materials used was collected from small establishments the estimated costs for which are included here. These estimated costs were \$2,511,562 in 1963 and \$1,521,834 in 1964.

Alter a second se	Value		
Description	1963	1964	
	\$'0	00	
1. Products:			
Aircraft and engines being built but not completed at year-end (value of work done on same)	64, 250	81,606	
Modifications, conversions, servicing, overhaul and repairs to aircraft, engines, etc. (value of work done)	58,966	57,306	
Aircraft parts manufactured	126,060	141,754	
All other products made	167, 343 <sup>1</sup>	209, 5371	
Total of above items	416, 619	490, 203	
Loss value of work done in previous year on aircraft and engines completed in current year	(61,658)	(94,923)	
Amount received in payment for work done on materials and products owned by others	5, 808	8,838	
Less adjustment for value of sales taxes, excise duties and outward transportation charges which could not be deducted from individual commodity items described above	(176)	( 342)	
Net adjustment for establishments receiving progress payments	-		
Total adjusted value of shipments and work done	360, 594	403, 776	

TABLE 13. Shipments of Goods of Own Manufacture, 1963 and 1964

<sup>1</sup> Includes the value of completed alreraft which is confidential.

#### List of Establishments classified to This Industry, 1964

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

Name	Location
Prince Edward Island:	
Enamel & Heating Products Ltd	P.O. Box 520, Charlottetown
Nova Scotia:	
Eastwing Aviation Ltd. Enamel & Heating Products Ltd. Fairey Canada Ltd.	205 Portland St., Dartmouth Lusby St., Amberst Eastern Passage
New Brunswick:	
Maritime Aircraft Overhaul & Repair Ltd	RR 4, Monctoo
Quebec:	
Aero Machinery Ltd. Aircraft Industries of Canada Ltd. Aircraft Technicians Inc. Aircraft Welding & Sheet Metals Co. Ltd. Amos Aviation Ltée. Bristol Aero-Industries Ltd. Canadair Limited Central Dynamics Ltd. Forndaie Industries Reg'd.	5411 Industrial Bivd., Montreal N. Municipai Airport, St. John's Montreal Internationai Airport, Dorval 7980 - 18e Ave., Ville St-Michel St-Mathieu 10210 Pie IX Blvd., Montreal N. Laurentian Blvd., St. Laurent 147 Hymus Bivd., Pointe-Claire 1540 Henri-Bourassa St., Montreai 12

## List of Establishments classified to This Industry, 1964 - Concluded

Name	Location				
puebec - Concluded:         Godfrey Engineering Co. Ltd.         Heroux Machine Parts Ltd.         Jarry Hydraulics Ltd.         La Prairie Alrcraft Inc.         Lasalle Engineering Ltd.         Lucas-Rotax Ltd.         Micro-Matic Engineering	340 Thurber St., Longueuil         3600 Rachel St. E., Montreal         536 Brossard St., La Prairie         1140 Wellington St., Montreal         5595 Royalmount Ave., Mount Royal				
Noorduyn Norseman Aircraft Ltd, Patenaude Industries Piastal Mfg. Limited R.C. Machine Parts Inc, Rolls-Royce of Canada Ltd, Timmins Aviation Ltd, United Aircraft of Canada Limited Westhill Industries Ltd,	476 Edouard St., Granby	Longueuil			
ntario:					
Aeroquip (Canada) Ltd.	287 Bridgeland Ave., Toronto 19				
Aircraft Appliance & Equipment Ltd. Aro of Canada Ltd. Avian Aircraft Ltd.	585 Dixon Rd., Rexdale 1416 Kipling Ave. N., Rexdale 116 Mountainview Rd. S., Georgetown				
B & W. Aircraft Boeing of Canada Ltd. (Vertol Div.) Canadian Flight Equip. Cobourg Ltd. Canadian Pratt & Whitney Services Ltd.	Skyline Drive R.R. #2, Guelph P.O. Box 338, Anprior 374 Sidney St., Trenton 90 Sparks St., Ottawa 4				
Custom Metal Co. Davair Components Ltd. De Havilland Aircraft of Canada Ltd., The	Oshawa Airport, Oshawa 537 Keele St., Toronto 9 Garratt Blvd., Downsview				
Dowty Equipment of C nada Ltd. Elliott, W.R. Ltd. Field Aviation Co. Ltd. Fleet Manufacturing Ltd.	239 Station St., Ajax 134 Sydney St. E., Kitchener Toronto International Airport, Malton Gilmore Rd., Fort Erie				
Garrett Manufacturing Ltd. Genaire (1961) Ltd. Hawker-Siddeley Canada Ltd. (Canadian Car Div.) Hawker-Siddeley Canada Ltd. (Orenda Div.)	4 Racine Rd. and 19 Attwell Dr., Rexdale Niagara District Airport, St. Catharines 1001 Montreal St., Fort William Rexdale Blvd., Malton				
Jarry Hydraulics Ltd. Kearney Aircraft Company Leavens Bros, Ltd.	1680 King St. E., Kitchener Lake Head Airport, Fort William 3220 Dufferin St., Toronto 19				
Leggat Aircraft Ltd. Muray, F.J. Machine Co. Ltd. Personal Plane Services Ltd. Plorite Precision Parts Ltd. Rayside Aircraft Maint. Ltd.	P.O. Box 180, R.R. 5, Ottawa 20 Cosentino Drive, Scarberough P.O. Box 73, Azilda				
Red Lake Seaplane Service Renfrew Aircraft & Engineering Co. Ltd, Skyrotor Limited Specialized Patenda, Sales & Development Ltd.	405 Hall Ave., Renfrew				
Thompson, H.I. of Canada Ltd., The Tube Benders & Fabricators Ltd. Walbar Machine Products of Canada Ltd. York Gears Ltd.	60 Johnston St., Guelph Streetsville 333 Horner Ave., Toronto 825 Caledonia Rd., Toronto 19				
anitoba:					
Bristol Aero Industries Ltd. Standard Aero Engine Ltd.	Corner of Ellice & Berry St., St. James WPG, International Airport, Winnipeg				
Adrian's Aircraft Maintenance Service	Airport, Box 1521, Saskatoon				
Iberta: Associated Helicopter (Repairs) Ltd.	Hangar No. 10, Municipal Airport, Edmonton				
B & L Aircraft Maintenance Ltd. Crow, Aubrey Custom Air Industries Ltd. Falconar Aircraft Field Aviation Co. Ltd.	Hangar No. 3, Municipal Airport, Edmonton Hangar No. 13, Industrial Airport, Edmonton Hangar No. 7, Municipal Airport, Edmonton Industrial Airport, Edmonton McCall Field, Calgary				
Northwest Industries Ltd. Satellite Aircraft Ltd. Superior Aircraft Repair Ltd. Western Propeller Co. Ltd.	Municipal Airport, Edmonton R.R. No. 1, Winterburn Hangar No. 9, Municipal Airport, Edmonton Hangar No. 16, Municipal Airport, Edmonton				
ritish Columbia:					
Aviation Electric Pacific Ltd. Bristol-Aero Industries Ltd. Canadian Aircraft Products Ltd.	Vancouver Airport, Vancouver Vancouver Airport, Vancouver 621 No 3 Rd., Richmond Bathiota Ray Airport Sidney				
Fairey Aviation Co. of Canada Ltd., The Helicopter Weiders of Canada Ltd. K.C.R. Aircraft Industries Ltd. K.F. Aircraft Repairs Ltd.	Patricia Bay Airport, Sidney Vancouver Airport, Vancouver Vancouver Airport, Vancouver Langley Airport, Langley				
Lucas-Rotax Ltd. Vancouver Aero Services Ltd.	Vancouver Airport, Vancouver Vancouver Airport, Vancouver				

## CONCEPTS AND DEFINITIONS

### Census of Manufactures

#### General

The Census of Manufactures is an annual mail survey covering Canada's Manufacturing Industries. It is based on the Standard Classification of Industries and full details concerning the system may be found in the Standard Industrial Classification manual, Catalogue No. 12-501 which is available from the Queen's Printer or the Dominion Bureau of Statistics. In summary, the Classification as it relates to the manufacturing industries provides for a breakdown into 140 industries arranged in 20 major industry groups. Of the 140 (3 digit) industries, 18 are further broken down into 56 (4 digit) sub classes. At the Canada level, principal statis-tics are collected and compiled for 176 separate industries. They cannot all be published separately by province, however, because of the confidential nature of the data in certain provinces.

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

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

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

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

#### Establishment

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

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

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

Each establishment is required to report on all the activities carried out within it's accounting boundaries (except income from investments such as rent, interest and dividends) and data on the different activities (manufacturing, trading in goods not of own manufacture, construction by own labour force, revenue from services, etc.) are requested to be reported separately. It should be noted that the statistics for separate activities are not completely consistent since some respondents cannot distinguish, in their records, materials, shipments and inventories relating solely to their own manufacturing activities. For example, inventory of goods purchased for re-sale may not be distinguishable from inventory of own manufactured goods. Complete consistency, therefore, can be obtained only at the "all operations" (total activity) level and for studies or statistical measures requiring accurate coordinated data, the "total" statistics should be used.

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

#### Head Offices and Auxiliary Units

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

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

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

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

#### Employees

#### (a) Production and related workers – Manufacturing activities

In addition to those engaged in production and assembling activities, they include those employed in storing, inspecting, handling, packing, warehousing, etc. They also include employees engaged in maintenance, repair, janitorial and watchman services and line supervisors (working foremen) engaged in similar work to that of the employees they supervise. For those establishments reporting on the "long" form, production and related workers engaged in manufacturing activity are reported as those receiving pay during the last pay period of each month, an average for the year being obtained by summing the monthly figures and dividing by 12. This procedure is followed even though the establishment did not operate in all months in order to arrive at equivalent annual full-time employment. The numbers are somewhat affected by turnover, in that employment is overstated when an employee changes employment during a pay period. In the case of those establishments reporting on the "short" form, respondents are requested to report average annual figures. The man-hours of production and related workers in manufacturing activity represent total man-hours paid (total hours at work during the calendar year plus hours not worked but nevertheless paid for, such as paid vacations, sick leave, statutory holidays, etc.). Data on man-hours are not collected from establishments reporting on the short form, Man-hours for these establishments are estimated on the basis of ratios derived from the 1958 census. During this census all establishments reported on the long form. In reporting overtime hours, respondents are requested to report only hours actually at work. It should be noted that the division of hours paid into production and related workers payrolls results in average hourly earnings and does not represent hourly wage rates which are collected and published by the Department of Labour and which are based on selected occupations.

#### (b) Production and related workers – Non-manufacturing activities

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

#### (c) Administrative and office employees

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

#### (d) Sales and distribution workers

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

#### (e) Total Employees

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

#### **Working Owners or Partners**

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

#### Salaries and Wages

Salaries and wages refer to gross earnings of employees before deductions for income tax and employees contributions to social services such as sickness, accident and unemployment insurance, pensions, etc. They include all salaries. wages. bonuses, profits shared with employees, the value of room and board where provided, commissions (paid to regular employees only) as well as any other allowance forming part of the worker's earnings. Payments for over-time are included. Figures on salaries and wages refer to the calendar year.

#### **Fuel and Electricity**

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

#### Materials and Supplies

#### (a) Manufacturing activities

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

#### (b) Non-manufacturing activities

#### 1. Purchases for re-sale as such

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

#### 2. Other materials and supplies used

Figures represent the cost of materials and supplies, if any, used in new construction and in the production of machinery and equipment (for the use of the reporting establishment) by the establishment's own employees. Included are materials used for any capital repairs and alterations carried out by the establishment's employees. Amounts paid to outside contractors for construction and repair work are not included nor is the cost of purchased machinery and equipment. Also included is the cost of office supplies not chargeable to fixed assets accounts and the cost of such other items of materials and supplies used as food, beverages and supplies for establishment-operated cafeterias and lunch counters, first aid and medical supplies, laboratory supplies, etc.

#### Shipments

#### (a) General

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

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

#### (b) Shipments of goods of own manufacture

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

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

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

#### (c) Shipments of goods not of own manufacture

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

#### (d) Other revenue

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

#### Inventories

#### (a) Manufacturing activities

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

#### (b) Non-manufacturing activities

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

#### Value Added

#### (a) By manufacturing activities

Figures are compiled by deducting the cost of manufacturing materials, supplies, etc. and fuel and electricity consumed from the (value of shipments of goods of own manufacture adjusted for changes in the value of inventories of finished goods and goods in process).

#### (b) By non-manufacturing activities

The figures are compiled by deducting the cost of goods purchased for re-sale (adjusted for changes in the value of inventories of goods purchased for re-sale) and the cost of non-manufacturing materials and supplies used from the value of shipments of goods not of own manufacture, plus other revenue.

#### (c) By Total activities

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





