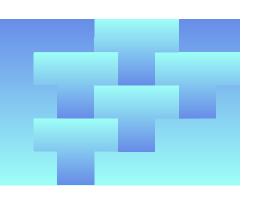


Transportation Division



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Vol. 20 No. 5

Results of the Annual Motor Carriers of Freight Survey of Small For-hire Carriers and Owner Operators, 2001

Highlights

Small for-hire carriers

The number of carriers with revenue under \$1 million was estimated at 5,700 in 2001. They represent more than 60% of carriers in the for-hire trucking industry.

Total operating revenues were \$1.51 billion, or about \$265,000 on average per carrier. Overall, small carriers account for 6% of revenue in the sector. Total operating expenses were \$1.43 billion, or \$250,000 on average per carrier.

Intra-provincial movements accounted for almost three-quarters of the operating revenues from transporting goods (73%, or \$1.10 billion). Next were international movements, which accounted for 19% (\$282 million), followed by inter-provincial movements with 9% (\$134 million).

Slightly less than three carriers in five (57%) specialize in transporting goods locally. This activity generates 56% of operating revenues.

The province with the most small for-hire carriers is Quebec, with a third of the Canadian total. Ontario and Alberta follow with 23% and 17%, respectively.

On average, these carriers had five employees (including owner operators), four of them full-time, and operated one straight truck, three road tractors and three semi-trailers each in 2001.

Owner operators

A total of 35,931 trucking firms were self-identified as owner operators in Canada in 2001. Of these, almost 99% had revenues under \$1 million.

Almost three-quarters (73%) of owner operators offered their services only to for-hire carriers, while one-fifth worked exclusively for private carriers.

Total operating revenues were almost \$6.60 billion in 2001, or about \$184,000 on average per carrier. Total operating expenses were \$5.94 billion, or \$165,000 on average per carrier.

Intra-provincial movements brought in some 64% of operating revenues from hauling goods (\$4.20 billion). Next were international movements with 24% (\$1.60 billion), followed by inter-provincial movements with 12% (\$796 million).

A narrow majority of owner operators (53%) specialized in long-distance hauls, which generated 55% of operating revenues.

Ontario had the most owner operators, with 35% of the Canadian total. Quebec and Alberta followed with 21% and 16%, respectively.

The average carrier had two employees, one road tractor and one semi-trailer.

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December 2004





<u>Annual Motor Carriers of Freight Survey of Small For-hire Carriers and Owner Operators: Financial and Operating Statistics, 2001</u>

Introduction

The Annual Motor Carriers of Freight Survey (AMCFS) provides information on the structure and performance of two distinct groups of carriers located in Canada: small for-hire carriers and owner operators.

Small for-hire carriers are carriers with annual operating revenues between \$30,000 and \$1 million. Combined with AMCFS data on medium and large carriers with revenues of \$1 million or more, this information helps to provide a more complete picture of the for-hire trucking industry.

Owner operators are independent operators who provide transport services under contract to for-hire carriers, private carriers, or both. While most owner operators are small businesses, the data in this publication cover all those that generated revenues of \$30,000 or more in 2001. Thus, the estimates will likely include some owner operators who generated revenues of \$1 million or more in 2001.

The financial estimates for the survey (revenue and expense data) are based on administrative files from the Tax Estimates Program. The other types of data (on activities, territory served, employment, equipment, fuel and distance) are collected through computer-assisted telephone interviews.

The publication is in three parts: section 1 contains results for small for-hire carriers, section 2 for owner operators, and section 3 contains a general review of the quality of data used in the survey.

Data limitations

Users are advised that financial data used in this article were taken from administrative records (tax files), which were not collected for statistical purposes. The financial data are compiled by Statistics Canada from a sample of Canada Revenue Agency T1 records of unincorporated firms' tax files and T2 records of incorporated firms' tax files.

Furthermore, operating ratios are not presented because they could be misinterpreted. Unincorporated businesses do not report labour costs in the same manner as incorporated ones on their tax returns. This is because working owners obtain their remuneration from profits, and they do not appear as expenses in the same way as salaries and wages do for incorporated companies. Also, fuel costs may have been reported under more than one expense category or may not be obtainable from the source of tax data. The result is an underestimation of total expenses, which would distort any calculated operating ratio.

SECTION 1 – SMALL FOR-HIRE CARRIERS

Sector size and operating data

There were an estimated 5,700 such carriers in 2001, representing 61% of all for-hire carriers. Despite their numbers, however, they accounted for only 7% of total operating revenues in the for-hire sector of the industry. Similarly, small for-hire carriers reported operating revenues of \$1.51 billion in 2001, or about \$265,000 on average per carrier. Total operating expenses were \$1.43 billion, or \$250,000 on average per carrier. Table 1 provides an outline of this sector of the for-hire trucking industry for 2001. It combines data on small (annual revenues of \$30,000 to \$999,999), medium and large (annual revenues of \$1 million to \$24,9 million) and very large carriers (annual revenues of \$25 million or more).

¹ A **private carrier** is one for which trucking is not the main activity, but which owns or leases vehicles for the primary purpose of hauling its own goods. Private trucking is not part of the for-hire trucking industry. Note that, following persistent problems with data quality, the private carrier trucking survey was discontinued after reference year 1998. Since that date, therefore, it has no longer been possible to obtain data on this segment of the trucking industry.

Table 1: Summary Statistics by size, For-hire Carriers, 2001

		Small Carriers	Medium & Large Carriers	Top Carriers	TOTAL
		(\$30,000 - \$999,999)5	(\$1 million - \$24.9 million) ⁶	(\$25 million and over)	
Estimated Number Reporting	No.	5,700	3,534	. 82	9,316
Operating Revenues	\$' 000,000	1,512	15,784	6,662	23,958
Operating Expenses ¹		1,428	14,631	6,224	22,282
Salaries and wages ²	\$' 000,000	336	3,670	1,617	5,622
Fuel	"	302	1,857	477	2,636
Owner operator expenses	"	91	3,425	1,804	5,320
Purchased transport ³	"	166	1,622	955	2,742
Maintenance .	"	137	992	318	1,446
Depreciation	"	151	807	247	1,206
Other expenses 4	"	244	2,259	807	3,310
Operating ratio		•••	0.93	0.93	
Number of employees	No.	23,002	84,675	32,921	140,597
Equipment Operated					
Straight trucks	No.	4,542	9,561	955	15,058
Road tractors	II .	11,461	45,063	14,591	71,115

- 1- Totals may not add due to rounding.
- 2- Includes employee benefits.
- 3- Includes driver services, vehicle lease or rent, total purchased transportation and load broker services.
- 4- Includes terminal expenses and other operating expenses (insurance, administration, etc.).
- 5- See methodology for 2001 in Section 3.
- 6- Includes carriers from the Annual survey of small for-hire carriers and owner operators with annual operating revenues greater than \$1 million.

 Note: Data for Top, Medium and Large Carriers are collected from the Quarterly Motor Carriers of Freight Survey while the Small Carriers data are from the Annual survey of small for-hire carriers and owner operators.

Principal activities

Small for-hire carriers derived most of their operating revenues from hauling "other specialized freight" (32%), general freight (27%) and dry bulk materials (15%). Other types of freight transported were forest products (16%), bulk liquids (7%) and household goods (4%).

The majority – some 57% – of small for-hire carriers were involved in local transportation of goods in 2001, as against 43% in long-distance haulage. Similarly, local operations generated some 56% of operating revenues, compared with 44% for long hauls. Tables 2, 3A and 3B contain data by type of transport activity.

			General		Bulk	Dry bulk	Forest	Other
		Total ¹	freight	Household	liquids	materials	products	commodities
Estimated Number Reporting	No.	5,700	1,654		401	1,042	828	,
Operating Revenues	\$ '000	1,511,641	401,533	,	108,004	223,258	239,233	•
Transportation Revenues	"	1,502,822	400,882	,	108,004	220,785	239,208	•
Other Revenues	"	8,819	651	771	0	2,473	25	,
Operating Expenses		1,427,549	381,458	,	99,858	222,947	201,824	•
Salaries and wages	"	328,671	85,583	13,077	24,041	50,928	43,656	111,386
Benefits	"	7,443	3,028	424	455	940	700	1,896
Fuel	"	302,457	77,921	9,764	19,312	49,833	43,477	102,150
Owner operator expenses	"	91,051	39,436		6,295	10,232	8,444	
Purchased transport	"	165,760	42,266	•	14,239	18,054	19,086	•
Maintenance	"	136,898	26,545	•	8,531	31,889	29,712	•
Depreciation	"	151,482	31,504	1,491	10,879	29,128	25,478	53,002
Insurance	"	47,129	13,158	1,014	2,385	6,756	9,057	14,759
Rent	п	52,233	21,980	1,908	2,195	5,632	6,681	13,837
Other expenses	"	144,426	40,036	18,142	11,526	19,556	15,533	39,633
Number of Full Time Employees Equipment Operated	No.	18,214 33,479	5,149 9,478		1,304 1,857	2,749 4,776	1,947 4,509	,
Straight trucks	II .	4,541	1,281	187	519	886	150	1,518
Distance travelled	' 000 km	225,826	53,798	6,301	20,431	43,435	3,423	98,438
Average distance	п	50	42	34	39	49	23	65
Road tractors	No.	11,461	3,308	144	600	1,435	1,700	4,274
Distance travelled	' 000 km	1,307,974	328,054	16,512	64,282	136,916	252,686	509,524
Average distance	"	114	99	115	107	95	149	119
Semi-trailers	No.	14,773	4,023	649	663	2,036	1,576	5,826
Other	II	2,705	866	19	75	420	1,083	242
Total distance	' 000 km	1,533,798	381,852	22,813	84,712	180,351	256,109	607,961
Fuel consumed	' 000 L	555,615	133,691	6,682	34,127	84,068	94,259	202,788

Some totals may not add due to rounding.

Table 3A: Summary Statistics by Type of Activity, Local Transport¹, Small For-Hire Carriers, 2001

Local Carriers		Total ²	General freight	Bulk liquids	Dry bulk materials	Forest products	Other commodities
Estimated Number Reporting -	No.	3,184	873	3 222	772	540	777
Operating Revenues	\$ '000	809,832	227,989	61,261	163,747	150,590	206,245
Transportation Revenues Other Revenues	"	806,511 3,320	227,989 0		161,276 2,471	150,569 21	205,416 828
Operating Expenses	"	766,965	213,154	56,290	169,152	120,809	207,560
Salaries and Wages	II .	189,276	46,688	14,943	42,151	27,425	58,069
Benefits	II .	3,580	1,216	444	799	454	667
Fuel	II .	161,974	45,784	10,205	37,337	29,063	39,585
Owner operator expenses	"	43,076	21,958	166	6,053	966	13,933
Purchased Transport	"	85,270	29,948	10,373	10,871	11,470	22,608
Maintenance	"	77,307	11,335	6,111	25,517	18,375	15,969
Depreciation	"	85,777	16,345	5,912	22,993	14,556	25,971
Insurance	"	22,700	5,569	1,337	5,293	6,299	4,202
Rent	"	27,127	13,160	1,550	3,539	3,448	5,430
Other Expenses	"	70,879	21,152	5,249	14,599	8,754	21,125
Number of Full Time Employees	No.	9,216	2,468	807	2,001	1,063	2,877
Equipment Operated	"	19,530	5,450	1,257	3,806	2,988	6,029
Straight trucks	"	2,983	954	457	857	145	570
Distance travelled	' 000 km	149,761	39,023	13,792	42,488	3,297	51,161
Average distance	"	50	41	30	50	23	90
Road tractors	No.	5,903	1,565	198	934	965	2,241
Distance travelled	' 000 km	497,435	102,360	17,348	62,145	104,191	211,391
Average distance	"	84	65	88	67	108	94
Semi-trailers	No.	8,557	2,148	529	1,658	1,085	3,137
Other	"	2,089	783	3 74	357	793	82
Total distance	' 000 km	647,197	141,383	31,140	104,633	107,489	262,552
Fuel consumed	' 000 L	225,181	46,677	14,145	49,451	41,951	72,957

¹⁻ Excludes household goods movers.

Table 3B: Summary Statistics by Type of Activity, Long-Distance Transport¹, Small For-Hire Carriers, 2001

			General		Dry bulk	Forest	Other
Long distance carriers		Total ²	freight	Bulk liquids	materials	products	commodities
Estimated Number Reporting	No.	2,386	781	179	270	287	869
Operating Revenues	\$ '000	648,521	173,543	46,743	59,511	88,643	280,081
Transportation Revenues	"	643,795	172,893	46,743	59,509	88,640	276,010
Other Revenues	"	4,728	651	0	2	4	4,071
Operating Expenses	"	609,816	168,303	43,569	53,795	81,015	263,134
Salaries and Wages	"	126,316	38,895	9,098	8,777	16,230	53,316
Benefits	"	3,440	1,812	12	141	246	1,229
Fuel	"	130,718	32,138	9,107	12,495	14,414	62,564
Owner operator expenses	"	47,704	17,479	6,129	4,179	7,479	12,438
Purchased Transport	"	77,297	12,318	3,867	7,183	7,616	46,313
Maintenance	"	58,110	15,209		6,372	11,337	22,772
Depreciation	"	64,214	15,159	4,967	6,135	10,923	27,030
Insurance	"	23,415	7,590	1,048	1,462	2,758	10,557
Rent	"	23,201	8,821	646	2,093	3,234	8,407
Other Expenses	"	55,405	18,884	6,277	4,957	6,779	18,508
Number of Full Time Employees	No.	8,280	2,682	497	749	884	3,468
Equipment Operated	"	12,950	4,028	599	970	1,521	5,832
Straight trucks	"	1,370	328	62	28	4	948
Distance travelled	' 000 km	69,764	14,775	6,639	947	126	47,277
Average distance	"	51	45	107	34	32	50
Road tractors	No.	5,416	1,743	402	501	736	2,034
Distance travelled	' 000 km	794,027	225,694	46,934	74,771	148,495	298,133
Average distance	"	147	129	117	149	202	147
Semi-trailers	No.	5,568	1,875	134	378	491	2,690
Other	"	596	83	1	62	290	160
Total distance	' 000 km	863,789	240,469	53,573	75,718	148,620	345,409
Fuel consumed	' 000 L	323,752	87,013	19,982	34,618	52,308	129,831

¹⁻ Excludes household goods movers.

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²⁻ Some totals may not add due to rounding.

²⁻ Some totals may not add due to rounding.

Movements

In 2001, the 3,165 carriers engaged exclusively in intra-provincial movements generated 52% (\$784 million) in total revenues. The 2,535 carriers with extra-provincial activities reported total revenues of \$728 million, of which \$282 million (39%) came from international movements. Table 4 provides data by type of movement.

Table 4: Summary Statistics by type of movement, Small For-hire Carriers, 2001

			Extra-provincial Carriers						
		Intra- provincial Carriers			_		International		
			Total ¹	Intra- Provincial	Inter- Provincial	Sub Total ¹	Into Canada	Out of Canada	
Estimated Number of Carriers		3,165	2,535						
	No.								
Operating Revenues	\$'000	783,682	727,960	312,528	133,509	281,923	127,607	154,316	
Operating Expenses	"	729,190	698,359	308,024	130,632	259,703	115,655	144,048	
Transportation Expenses	"	557,722	533,931	244,562	97,199	192,170	85,170	107,000	
Maintenance and Garage Expense	s "	75,660	61,237	25,282	11,521	24,434	10,801	13,633	
Administrative and General Off Expenses	ice "	95,808	103,191	38,180	21,912	43,099	19,684	23,415	
Number of full time employees	No.	8,549	9,666				•••		
Salaries and wages	\$'000	175,230	153,441						
Equipment operated	No.	17,071	16,409						
Straight trucks	"	2,979	1,563						
Road tractors	"	5,071	6,390						
Semi-trailers	"	6,802	7,971						
Other	ıı	2,219	484						

^{1 -} Total may not add due to rounding.

Geographical distribution

In 2001, Quebec had the most small for-hire carriers with 33%, which generated the largest total operating revenues: \$489 million. Ontario and Alberta followed with 23% and 17% of such carriers, and \$289 million and \$265 million in revenues, respectively. Table 5 shows data by province or territory of domicile.

Table 5: Summary Statistics by Province or Territory of Domicile, Small For-hire Carriers, 2001

Table 5. Summary Statistics	, by 110v	Canada	Newfoundland & Labrador	Prince Edward Island	Nova Scotia	New Brunswick
Estimated Number Reporting	No.	5,700	87	21	126	130
Operating Revenues	\$' 000	1,511,642	24,040	7,504	30,182	41,352
Transportation Revenues	"	1,502,823	24,040	7,504	30,182	41,302
Other Revenues	"	8,819	0	0	0	50
Operating Expenses	"	1,427,549	22,657	7,218	29,927	38,977
Salaries and Wages	"	328,670	5,793	X	6,284	9,680
Benefits	"	7,443	25	X	214	61
Fuel	"	302,457	6,470	1,677	6,184	9,385
Owner operator expenses	"	91,051	531	X	1,800	1,328
Purchased Transport	"	165,761	2,089	Х	3,487	3,819
Maintenance	"	136,897	2,072	806	3,234	3,759
Depreciation	"	151,482	2,359	914	3,954	4,760
Insurance	II .	47,129	948	280	867	1,163
Rent	II .	52,234	317	70	737	1,143
Other Expenses		144,426	2,053	999	3,165	3,879
Number of Full Time Employees	No.	18,215	370	66	562	811
		Quebec	Ontario	Manitoba	Saskatchewan	Alberta
Estimated Number Reporting	No.	1,884	1,309	238	225	959
Operating Revenues	\$' 000	488,700	288,602	61,237	76,993	265,147
Transportation Revenues Other Revenues	"	487,845 855	285,943 2,659	X X	76,976 18	265,102 45
Operating Expenses	"	444,608	275,855	55,996	73,347	254,461
Salaries and Wages	"	94,225	61,502	12,646	16,932	63,380
Benefits	"	2,883	1,437	154	305	798
Fuel	"	105,151	55,703	12,655	17,101	48,230
Owner operator expenses	"	18,387 43,446	21,357	3,267	4,728	12,841
Purchased Transport Maintenance	"	48,673	30,380 26,671	4,778 7,130	9,359 7,432	37,611 19,719
Depreciation	"	52,269	27,521	6,138	7,363	28,852
Insurance	"	14,497	10,062	1,839	2,352	8,790
Rent	"	15,794	11,368	1,393	2,546	9,319
Other Expenses Number of Full Time Employees	" No.	49,283 4,444	29,854 4,879	5,996 782	5,230 719	24,922 2,696
		B.W. I		N 0 (T %)		
		British Columbia	Yukon	Northwest Territories and Nunavut		
Estimated Number Reporting	No.	706	8	6		
Operating Revenues	\$' 000	224,090	1,542	2,252		
Transportation Revenues	"	219,075	X	X		
Other Revenues	"	5,015	X	X		
Operating Expenses	"	221,208	1,197	2,098		
Salaries and Wages	"	55,754 1,556	X	X		
Benefits Fuel	"	39,180	298	421		
Owner operator expenses	"	26,653	250 X	X		
Purchased Transport	"	29,594	X	X		
Maintenance	"	17,224	106	72		
Depreciation	"	17,089	86	176		
Insurance	m m	6,231	36	64		
Rent	"	9,490	28	29		
Other Expenses	"	18,437	237	371		
Number of Full Time Employees	No.	2,860	14	12		

Note: Some totals may not add due to rounding.

Employment

Small for-hire carriers reported 28,049 employees, in 2001, of whom more than four out of five were salaried and the remainder owner operators. Moreover, 78% of their employees were full-time. The average firm had five employees, four full-time and one part-time. Table 6 shows the number of employees by type and by province or territory of domicile.

Table 6: Number of Employees by Type and by Province or Territory of Domicile, Small For-hire Carriers, 2001

	Canada	Newfoundland & Labrador	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario
Estimated Number							
Reporting	5,700	87	21	126	130	1,884	1,309
Employees:							
Drivers							
Full Time	13,232	299	52	420	302	3,408	3,240
Part Time	2,795	68	X	64	141	1,021	304
Other Employees							
Full Time	4,983	71	14	142	509	1,036	1,640
Part Time	1,992	28	X	39	48	407	591
Total-Drivers and Other							
Employees							
Full Time	18,215	370	66	562	811	4,444	4,879
Part Time	4,787	96	X	103	188	1,428	894
Total-Owner Operators							
Full Time	3,709	15	Χ	31	X	596	1,273
Part Time	1,338	0	0	55	X	350	146
						Northwest	

	Manitoba	Saskatchewan	Alberta	British Columbia	Yukon	Northwest Territories and Nunavut	
Estimated Number							
Reporting	238	225	959	706	8	6	
Employees:							
Drivers							
Full Time	635	538	2,211	2,108	10	9	
Part Time	92	166	505	423	X	X	
Other Employees							
Full Time	147	180	486	752	3	3	
Part Time	47	69	507	246	X	Х	
Total-Drivers & Other Employees							
Full Time	782	719	2,696	2,860	14	12	
Part Time	140	235	1,012	669	X	Χ	
Total-Owner Operators							
Full Time	101	160	295	1,185	0	Χ	
Part Time	20	21	154	574	X	X	

1 - Some totals may not add due to rounding.

Equipment

Small for-hire carriers operated an estimated 33,479 units of owned or leased equipment. The figure rises to 40,814 if we include units operated exclusively by owner operators. In all, the equipment consisted of 16,391 semi-trailers (40%), 15,400 road tractors (38%), 6,309 straight trucks (15%) and 2,715 other units (7%). Table 7 lists equipment in use by province or territory of domicile.

Table 7: Equipment Operated by Province or Territory of Domicile, Small For-hire Carriers, 2001

	Straight Trucks	Road Tractors	Semi-Trailers	Other Equipment	Total (1)
			Number		
Newfoundland & Labrador		400			
Owned and Leased	88	198	171	117	573
Operated by Owner Operator	0	15	5	0	20
Prince Edward Island					
Owned and Leased	14	47	282	0	344
Operated by Owner Operator	0	X	X	0	Х
Nova Scotia					
Owned and Leased	129	301	325	71	825
Operated by Owner Operator	0	43	23	0	66
New Brunswick					
Owned and Leased	89	400	581	48	1,118
Operated by Owner Operator	0	X	X	X	64
Quebec					
Owned and Leased	1,340	3,214	3,333	596	8,483
Operated by Owner Operator	74	781	605	0	1,459
Ontario					
Owned and Leased	1,370	2,935	3,829	1,071	9,205
Operated by Owner Operator	1,426	853	135	0	2,414
operated by Owner Operator	1,420	000	100	Ŭ	2,717
Manitoba Owned and Leased	00	404	4.040	0.4	0.000
Owned and Leased Operated by Owner Operator	62 34	401 87	1,819 47	84 0	2,366 168
operated by Owner Operator	04	O1	71	Ü	100
Saskatchewan					
Owned and Leased	67	441	512	193	1,213
Operated by Owner Operator	8	147	102	0	256
Alberta					
Owned and Leased	641	1,668	1,789	244	4,341
Operated by Owner Operator	X	461	216	X	742
British Columbia					
Owned and Leased	732	1,840	2,109	278	4,959
Operated by Owner Operator	X	1,489	477	X	2,133
Yukon					
Owned and Leased	4	8	8	4	25
Operated by Owner Operator	X	X	0	0	Х
Northwest Territories and					
Nunavut Owned and Leased	E	0	14	0	27
Owned and Leased Operated by Owner Operator	5 0	8 X	14 X	0	27 X
,					
CANADA Owned and Leased	4,542	11,461	14,773	2,704	33,479
Operated by Owner Operator	1,767	3,939	1,618	2,704	7,335
,,	.,	-,0	.,	•	.,

Distance

Small for-hire carriers travelled an average of 47,000 kilometres with straight trucks and 313,000 kilometres with road tractors in 2001. Table 8 shows annual estimates of distance travelled by type of vehicle and by province or territory of domicile.

Table 8: Estimated Annual Distance Travelled by Type of Vehicle and by Province or Territory of Domicile, Small For-hire Carriers, 2001

		;	Straight Trucks			Road Tractors		
	Total Distance	Total	Owned and Leased	Operated by Owner Operator	Total	Owned and Leased	Operated by Owner Operator	
				('000')	km)			
Newfoundland & Labrador	27,784	4,121	4,121	0	23,663	21,777	1,886	
Prince Edward Island	7,371	552	552	0	6,819	X	X	
Nova Scotia	53,511	8,190	8,190	0	45,321	39,032	6,289	
New Brunswick	43,266	2,271	2,271	0	40,995	34,569	6,426	
Quebec	456,172	77,666	74,782	2,885	378,505	302,100	76,405	
Ontario	511,940	93,369	67,647	25,722	418,571	317,930	100,642	
Manitoba	71,073	3,947	2,510	1,437	67,126	57,786	9,339	
Saskatchewan	82,510	4,338	3,997	341	78,172	59,722	18,450	
Alberta	273,558	32,564	29,003	3,561	240,994	184,675	56,319	
British Columbia	523,212	41,879	32,357	9,522	481,333	282,510	198,823	
Yukon	816	250	250	0	566	X	X	
Northwest Territories and Nunavut	1,553	145	145	0	1,409	Х	X	
CANADA	2,052,767	269,293	225,824	43,468	1,783,474	1,307,974	475,501	

Note: Some totals may not add due to rounding.

Fuel

In 2001, small for-hire carriers consumed a total of 556 million litres of fuel at a total cost of \$327 million. The average cost per litre was 59 cents. Provincially, the average cost per litre varied from 56 cents in Alberta and Manitoba to 65 cents in the Northwest Territories and Nunavut. Table 9 shows fuel consumption and cost by province or territory of domicile.

Table 9: Fuel Consumption and Cost by Province or Territory of Domicile, Small For-hire carriers, 2001

	Estimated Number Reporting	Fuel Consumed	Total Cost	Average Cost Per Litre
	No.	Litre	\$	\$
Newfoundland & Labrador	87	9,397,297	5,922,136	0.63
Prince Edward Island	21	3,077,817	1,847,036	0.60
Nova Scotia	126	21,489,735	12,927,043	0.60
New Brunswick	130	16,266,864	9,764,041	0.60
Quebec	1,884	151,566,398	92,393,326	0.61
Ontario	1,309	99,489,363	57,648,421	0.58
Manitoba	238	24,129,947	13,530,467	0.56
Saskatchewan	225	29,767,005	17,281,525	0.58
Alberta	959	96,696,114	53,978,352	0.56
British Columbia	706	102,991,245	60,890,397	0.59
Yukon Northwest Territories and	8	352,010	219,177	0.62
Nunavut	6	391,363	254,496	0.65
CANADA	5,700	555,615,158	326,656,417	0.59

Note: Some totals may not add due to rounding.

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SECTION 2 - OWNER OPERATORS

Sector size

Some 35,931 trucking firms self-identified as owner operators in Canada in 2001. Of these, slightly under threequarters (73%) worked exclusively for for-hire carriers, and one-fifth worked exclusively for private carriers. Table 10 shows a breakdown of owner operators by type of employer and by region of domicile.

Table 10: Distribution of Owner Operators by Carrier Types and by Region of Domicile, Owner Operators, 2001

	For-hire Carriers	Private Carriers	Both	Total ¹
		ber		
Atlantic	1,788	Х	Χ	2,528
Quebec	5,829	1,009	677	7,515
Ontario	9,144	2,889	455	12,488
Prairies	6,322	1,933	85	8,840
British Columbia	3,150	1,097	272	4,519
Territories	28	X	X	41
CANADA	26,261	7,386	2,284	35,931

^{1 -} Some totals may not add due to rounding.

Operating revenues and expenses

In 2001, operating revenues totalled almost \$6.60 billion, or about \$184,000 on average per carrier. Total operating expenses were \$5.94 billion, or \$165,000 on average per carrier. Table 11 shows a detailed breakdown of operating revenues and expenses from 1999 to 2001.

Table 11: Summary Statistics, Owner Operators, 1999 - 2001

		2001	2000	1999
Estimated Number Reporting	No.	35,931	35,979	37,196
Operating Revenues	\$ '000	6,598,667	6,329,018	5,896,757
Transportation Revenues	II	6,587,501	6,311,902	5,802,070
Other Revenues	"	11,165	17,116	94,686
Operating Expenses	н	5,935,630	5,709,523	5,074,337
Salaries and Wages	II .	1,339,347	1,171,309	1,117,913
Benefits	"	22,420	20,526	20,957
Fuel	II	1,539,092	1,661,371	1,188,111
Owner Operator Expenses	II .			
Purchased Transport	II .	571,852	499,409	274,178
Maintenance	II	601,029	522,049	436,904
Depreciation	II	769,132	768,629	671,622
Insurance	II .	217,338	186,451	196,305
Rent	ĪĪ	172,929	171,084	165,432
Other Expenses	II	702,491	708,696	1,002,916
Number of Full Time Employees ¹	No.	60,799	58,990	60,488
Equipment Operated	п	83,744	85,118	89,495

^{1 -} Working owners included.

Note: Some totals may not add due to rounding.

Although they represented only 1% of all owner operators, those with revenues of \$1 million or more accounted for 11% of total operating revenues. Table 12 shows a breakdown of operating revenues and expenses by size of firm.

Table 12:	Summary	Statistics by	y size, Owr	ner O	perators, 2001

	_	Total ¹	Small Enterprises (\$30,000 million - \$999,999 million)	Medium & Large Enterprises (\$1 million and over)
Estimated Number Reporting	No.	35,931	35,548	383
Operating Revenues	\$ '000	6,598,667	5,883,879	714,788
Operating Expenses	"	5,935,630	5,243,826	691,805
Salaries and Wages ²	"	1,361,767	1,209,291	152,476
Fuel	"	1,539,092	1,422,947	116,145
Purchased Transport ³	II	744,781	506,374	238,406
Maintenance	"	601,029	567,552	33,476
Depreciation	II .	769,132	682,104	87,028
Other Expenses 4	II	919,829	855,557	64,272
Number of employees ⁵	No.	78,219	74,128	4,091
Equipment Operated				
Straight Trucks	"	12,148	11,760	388
Road Tractors	"	39,807	37,529	2,278

¹⁻ Totals may not add due to rounding.

Principal activities

Owner operators derived most of their operating revenues from truck transport of general freight (34%), other specialized freight (24%), and dry bulk materials (19%). Other types of freight were forest products (14%), bulk liquids (8%) and household goods (2%).

A narrow majority (53%) of owner operators were involved in long-distance haulage in 2001, as against 47% in local transportation. Long-distance hauls generated almost 55% of operating revenues, as against 45% for local transportation. Tables 13, 14A and 14B contain data on types of transport activity.

²⁻ Includes employee benefits.

³⁻ Includes driver services, vehicle lease or rent, total purchased transportation and load broker services.

⁴⁻ Includes terminal and insurance expenses.

⁵⁻ Working owners, full and part time employees are included.

Table 13: Summary Statistics by Type of Activity, Owner Operators, 2001

		Total ¹	General freight	House- hold	Bulk liquids	Dry bulk materials	Forest products	Other commodities
Estimated Number Reporting	No.	35,931	13,817	638	2,198	8,452	4,040	6,785
Operating Revenues	\$ '000	6,598,668	2,228,134	134,420	512,598	1,229,526	942,815	1,551,175
Transportation Revenues	ıı	6,587,502	2,222,678	131,853	510,769	1,229,168	942,685	1,550,349
Other Revenues	ıı	11,166	5,456	2,567	1,829	358	130	826
Operating Expenses	ıı	5,935,631	1,981,563	125,777	458,267	1,085,219	870,279	1,414,526
Salaries and Wages	II	1,339,346	443,734	37,457	139,455	220,161	182,493	316,046
Benefits	"	22,421	5,381	861	2,781	3,762	4,730	4,906
Fuel	"	1,539,092	526,698	25,001	94,262	314,508	201,669	376,954
Owner Operator Expenses	"	0	0	0	0	0	0	0
Purchased Transport	"	571,851	172,052	19,297	44,779	94,088	83,059	158,576
Maintenance	"	601,029	190,462	7,191	43,998	111,674	115,525	132,179
Depreciation	ıı	769,133	273,977	7,648	58,264	143,218	123,518	162,508
Insurance	ıı	217,338	77,955	4,018	16,045	32,469	38,330	48,521
Rent	ıı	172,930	50,576	4,765	12,663	32,647	25,212	47,067
Other Expenses	"	702,491	240,729	19,538	46,020	132,693	95,743	167,768
Number of Full Time Employees ²	No.	60,798	22,588	1,457	4,030	12,373	7,331	13,019
Equipment Operated	II	83,743	28,276	1,688	4,515	20,125	11,233	17,906
Straight trucks	"	12,148	3,627	561	1,236	5,434	543	747
Distance travelled	' 000 km	631,873	233,941	32,686	66,850	203,350	50,090	44,956
Average distance	"	52	64	58	54	37	92	60
Road tractors	No.	39,808	15,425	556	2,234	7,197	5,202	9,194
Distance travelled	' 000 km	5,308,108	2,181,322	75,260	292,818	812,897	649,300	1,296,511
Average distance	ıı	133	141	135	131	113	125	141
Semi-trailers	No.	27,031	8,876	541	707	6,076	4,433	6,398
Other	"	4,756	348	30	338	1,418	1,055	1,567
Total distance	' 000 km	5,939,981	2,415,263	107,946	359,668	1,016,247	699,390	1,341,467
Fuel consumed	' 000 L	2,605,254	1,120,675	32,111	149,566	458,893	301,698	542,311

¹⁻ Some totals may not add due to rounding.2- Working owners included.

Table 14A: Summary Statistics by Type of Activity, Local Transport¹, Owner Operators, 2001

Local Carriers		Total ²	General freight	Bulk liquids	Dry bulk materials	Forest products	Other commodities
Estimated Number Reporting	No.	16,469	4,878	1,239	5,208	2,162	2,982
Operating Revenues	\$ '000	2,934,249	659,429	272,615	818,908	473,836	709,461
Transportation Revenues	II .	2,928,692	656,282	270,894	818,553	473,711	709,252
Other Revenues	II .	5,557	3,146	1,721	356	125	209
Operating Expenses	"	2,646,700	569,860	244,283	744,597	436,974	650,986
Salaries and Wages	II .	646,529	150,581	76,370	161,896	95,843	161,839
Benefits	u u	10,850	2,167	1,605	3,026	2,349	1,703
Fuel	·	601,217	140,925	39,313	183,859	82,990	154,130
Owner Operator Expenses	"						
Purchased Transport	II .	306,793	67,202	30,754	71,229	53,303	84,305
Maintenance	II .	264,594	36,842	22,142	91,397	58,974	55,239
Depreciation	II .	336,524	62,192	31,415	99,836	67,759	75,322
Insurance	u u	92,104	22,585	8,584	25,734	17,852	17,349
Rent	u u	76,833	13,030	7,768	24,077	12,325	19,633
Other Expenses	·	311,259	74,336	26,333	83,544	45,579	81,467
Number of Full Time Employees ³	No.	30,358	9,387	2,200	8,609	3,807	6,355
Equipment Operated	II	39,540	7,974	2,518	15,132	5,880	8,036
Straight trucks	"	9,540	2,208	1,017	5,404	388	523
Distance travelled	' 000 km	469,233	147,409	54,776	201,076	35,234	30,738
Average distance	II .	49	67	54	37	91	59
Road tractors	No.	15,621	4,331	1,013	3,655	2,635	3,987
Distance travelled	' 000 km	1,437,142	342,634	87,342	271,269	268,357	467,540
Average distance	II .	92	79	86	74	102	117
Semi-trailers	No.	11,063	1,263	305	4,719	2,128	2,648
Other	"	3,315	172	183	1,354	728	878
Total distance	' 000 km	1,906,377	490,043	142,119	472,345	303,592	498,278
Fuel consumed 1- Excludes household goods movers	' 000 L	897,914	250,796	59,631	263,617	132,926	190,944

¹⁻ Excludes household goods movers.

²⁻ Some totals may not add due to rounding.3- Working owners included.

Table 14B: Summary Statistics by Type of Activity, Long-Distance Transport ¹ , Owner Operators, 2001

			General		Dry bulk	Forest	Other
Long distance carriers		Total ²	freight	Bulk liquids	materials	products	commodities
Estimated Number Reporting	No.	18,825	8,940	959	3,244	1,878	3,804
Operating Revenues	\$ _. '000	3,529,999	1,568,706	239,983	410,617	468,979	841,714
Transportation Revenues		3,526,955	1,566,395	239,874	410,615	468,974	841,097
Other Revenues	"	3,043	2,310	109	2	5	617
Operating Expenses	"	3,163,154	1,411,703	213,984	340,621	433,306	763,540
Salaries and Wages		655,361	293,153	63,086	58,265	86,650	154,207
Benefits	"	10,710	3,214	1,177	736	2,381	3,202
Fuel	II .	912,873	385,773	54,948	130,649	118,679	222,824
Owner operator expenses	"						
Purchased Transport	"	245,762	104,850	14,025	22,860	29,756	74,271
Maintenance	II .	329,244	153,620	21,856	20,277	56,551	76,940
Depreciation	"	424,962	211,785	26,849	43,382	55,759	87,187
Insurance	II .	121,215	55,370	7,461	6,734	20,478	31,172
Rent	п	91,332	37,546	4,895	8,571	12,886	27,434
Other Expenses	"	371,695	166,393	19,687	49,149	50,164	86,302
Number of Full Time Employees ³	No.	28,986	13,202	1,830	3,765	3,524	6,665
Equipment Operated	II .	42,516	20,302	1,997	4,993	5,354	9,870
Straight trucks	"	2,046	1,419	218	30	155	224
Distance travelled	' 000 km	129,955	86,532	12,074	2,275	14,856	14,218
Average distance	"	64	61	55	76	96	63
Road tractors	No.	23,631	11,094	1,221	3,542	2,567	5,207
Distance travelled	' 000 km	3,795,705	1,838,688	205,476	541,628	380,942	828,971
Average distance	"	161	166	168	153	148	159
Semi-trailers	No.	15,425	7,613	402	1,357	2,304	3,749
Other	"	1,413	176	155	65	327	690
Total distance Fuel consumed	' 000 km ' 000 L	3,925,659 1,675,228	1,925,220 869,879	217,550 89,936	543,902 195,275	395,798 168,771	843,189 351,367

^{1 -} Excludes household goods movers.

Movements

Intra-provincial movements generated 64% of trucking revenues (\$4.20 billion) in 2001, followed by international movements with 24% (\$1.60 billion) and inter-provincial movements with 12% (\$796 million). Table 15 shows data by type of movement.

Table 15: Summary Statistics by type of movement, Owner Operators, 2001

		Intra- provincial			Extra-provi	ncial Carriers	1	
		Carriers				International		
			Total ¹	Intra- Provincial	Inter- Provincial	Sub Total ¹	Into Canada	Out of Canada
Estimated Number of Carriers		18,775	17,156		35,931			
	No.							
Operating Revenues	\$'000	3,221,435	3,377,231	981,829	795,616	1,599,786	725,819	873,967
Operating Expenses	"	2,876,487	3,059,143	895,772	724,662	1,438,709	651,024	787,685
Transportation Expenses	"	2,128,742	2,263,609	669,004	547,964	1,046,641	479,959	566,682
Maintenance and Garage Expenses Administrative and General Office Ex	" (-	312,193	288,835	86,186	65,234	137,415	59,195	78,220
penses	"	435,551	506,699	140,582	111,464	254,653	111,870	142,783
Number of full time employees	No.	33,395	27,404					
Salaries and wages	\$'000	689,410	649,936					
Equipment operated	No.	43,675	40,068					
Straight Trucks	"	11,071	1,077					
Road Tractors	"	17,195	22,613					
Semi-Trailers	"	11,948	15,083					
Other	II .	3,462	1,295					

^{2 -} Some totals may not add due to rounding.

^{3 -} Working owners included.

Geographical distribution

Ontario had the most owner operators in 2001, with 35%, and the most operating revenues with \$2.06 billion. Quebec and Alberta followed with 21% and 16% of owner operators and \$1.50 billion and \$1.16 billion in revenues, respectively. Table 16 contains data by province or territory of domicile.

Table 16: Summary Statistics by Pro	ovince or Territory of D	omicile, O	wner Operators, 200°	1
	Newfoundla	and & Pri	ince Edward	

		Canada	Labrador	Island	Nova Scotia	New Brunswick
Estimated Number Reporting	No.	35,931	329	178	756	1,265
Operating Revenues	\$' 000	6,598,667	65,096	38,721	162,256	268,944
Transportation Revenues	ψ UUU "	6,587,501	64,276	38,721	162,247	268,745
Other Revenues	"	11,165	820	00,721	8	199
Operating Expenses	"	5,935,630	64,230	36,585	145,856	243,718
Salaries and Wages	II .	1,339,347	16,109	8,709	30,184	52,079
Benefits	II .	22,420	194	2	442	617
Fuel	"	1,539,092	18,708	9,678	42,141	70,769
Owner Operator Expenses	"	0	0	9,070	42,141	70,709
Purchased Transport	II .	571,852	5,235	4,149	17,931	22,826
Maintenance	"	601,029	4,809	3,392	11,058	25,502
Depreciation	"	769,132	9,288	3,766	17,051	29,739
Insurance	"	217,338	2,286	928	4,798	9,561
Rent	"	172,929	1,724	1,638	4,180	5,804
Other Expenses	"	702,491	5,877	4,321	18,071	26,821
Number of Full Time Employees	No.	60,799	626	395	1,271	2,306
rumber er rum rime Empleyeee		Quebec	Ontario	Manitoba	Saskatchewan	Alberta
Estimated Number Reporting	No.	7,514	12,488	1.577	1,385	5,878
Operating Revenues	\$' 000	1,497,511	2,062,587	293,393	293,856	1,161,398
Transportation Revenues	"	1,493,386	2,062,257	293,274	291,590	1,160,685
Other Revenues	ıı .	4,125	330	118	2,266	713
Operating Expenses	"	1,383,889	1,842,916	252,571	262,773	1,055,517
Salaries and Wages	"	309,742	418,222	47,956	56,347	254,179
Benefits	"	8,076	5,491	471	1,165	3,141
Fuel	"	304,369	543,287	85,725	72,634	230,707
Owner Operator Expenses	"	0	0	0	0	0
Purchased Transport	"	150,838	167,291	19,758	22,746	107,611
Maintenance	"	162,577	154,158	19,390	28,282	126,084
Depreciation	"	177,248	253,717	30,399	30,635	132,011
Insurance	II .	47,426	58,817	7,312	8,330	41,774
Rent	ıı .	52,312	43,931	5,370	9,794	31,268
Other Expenses	"	171,301	198,001	36,188	32,839	128,741
Number of Full Time Employees	No.	13,246	20,183	2,711	2,405	10,738
				_		
		British Columbia	Yukon	Northwest Territo- ries and Nunavut		
Fating at a d. Nivershaw Damantin a	NI ₂		27			
Estimated Number Reporting	No.	4,519		15		
Operating Revenues	\$' 000	746,140	6,185	2,580		
Transportation Revenues	"	743,569	6,169	2,580		
Other Revenues	II .	2,571	16	0		
Operating Expenses	"	639,362	5,926	2,288		
Salaries and Wages	II .	144,384	1,053	381		
Benefits	"	2,807	10	3		
Fuel	II .	159,481	1,251	344		
Owner operator expenses	"	0	0	0		
Purchased Transport	"	52,862	34	570		
Maintenance	"	64,660	1,049	66		
Depreciation	"		672	519		
•	,,	84,086				
Insurance	,,	35,762	237	107		
Rent		16,532	272	104		

78,787

6,844

No.

1,348

49

195

25

Note: Some totals may not add due to rounding.

Number of Full Time Employees

Other Expenses

Employment

Owner operators reported 78,219 employees in 2001, almost four out of five (78%) of them full-time. Some 83% of the full-time employees were truck or road tractor drivers. There were on average about two employees per carrier, most of them full-time drivers. Table 17 shows the number of employees by type and province or territory of domicile.

	Canada	Newfoundland & Labrador	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario
Estimated Number Reporting	35,931	329	178	756	1,265	7,514	12,488
Employees:							
Drivers							
Full Time	50,207	514	352	1,036	2,011	11,207	15,875
Part Time	7,819	148	X	222	395	1,518	1,868
Other Employees							
Full Time	10,591	112	43	235	295	2,039	4,307
Part Time	9,601	97	X	130	300	1,650	2,114
Total							
Full Time	60,799	626	395	1,271	2,306	13,246	20,183
Part Time	17,420	245	119	352	695	3,168	3,982
	Manitoba	Saskatchewan	Alberta	British Columbia	Yukon	Northwest Territories and Nunavut	
Estimated Number Reporting	1,577	1,385	5,878	4,519	27	15	
Employees:							
Drivers							
Full Time	2,406	1,993	9,058	5,700	36	18	
Part Time	290	467	1,471	1,370	X	X	
Other Employees							
Full Time	305	412	1,679	1,144	13	7	
Part Time	477	588	2,165	2,003	X	X	
Total							
Full Time	2,711	2,405	10,738	6,844	49	25	
Part Time	767	1,055	3,636	3,374	18	8	

Equipment

Owner operators operated an estimated 83,744 owned or leased motor vehicles. The total fleet was made up of 39,807 road tractors (48%), 27,031 semi-trailers (32%), 12,148 straight trucks (15%) and 4,757 other vehicles (6%). The average was one road tractor and one semi-trailer per carrier. Table 18 shows equipment in service by province or territory of domicile.

Table 18: Equipment Operated by Province or Territory of Domicile¹, Owner Operators, 2001

	Straight Trucks	Road Tractors	Semi- Trailers	Other Equipment	Total ²
			Number		
Newfoundland & Labrador	267	376	292	41	975
Prince Edward Island	Χ	253	165	Χ	604
Nova Scotia	290	1,064	609	94	2,057
New Brunswick	221	1,860	1,333	207	3,622
Quebec	2,759	8,113	6,080	458	17,411
Ontario	3,601	13,190	8,434	965	26,191
Manitoba	237	2,095	1,155	148	3,636
Saskatchewan	321	1,619	862	208	3,012
Alberta	2,030	6,994	4,419	1,410	14,853
British Columbia	2,243	4,188	3,625	1,177	11,233
Yukon	X	33	30	Х	80
Northwest Territories and Nunavut	X	21	26	X	69
CANADA	12,148	39,807	27,031	4,757	83,744

^{1.} Owned and leased by a company.

Distance

Owner operators travelled an average of 18,000 kilometres per straight truck and 148,000 kilometres per road tractor in 2001. Table 19 shows the estimated annual distance travelled by type of vehicle and by province or territory of domicile.

Table 19: Estimated Annual Distance Travelled by Type of Vehicle and by Province or Territory of Domicile, Owner Operators, 2001

	Total Distance Straight Trucks		Road Tractors	
		('000 km)		
Newfoundland & Labrador	63,200	14,411	48,789	
Prince Edward Island	39,099	4,862	34,237	
Nova Scotia	135,910	8,598	127,312	
New Brunswick	268,743	12,162	256,581	
Quebec	1,339,898	138,636	1,201,262	
Ontario	1,963,124	218,955	1,744,169	
Manitoba	324,062	8,111	315,951	
Saskatchewan	252,171	10,995	241,177	
Alberta	979,289	91,101	888,188	
British Columbia	569,043	123,147	445,896	
Yukon	3,002	697	2,306	
Northwest Territories and Nunavut	2,440	200	2,240	
CANADA	5,939,982	631,875	5,308,108	

Note: Some totals may not add due to rounding.

^{2.} Some totals may not add due to rounding.

Fuel

In 2001, owner operators consumed a total of 2.61 billion litres of fuel at a total cost of \$1.51 billion. The average cost per litre was 58 cents. Provincially, the average cost per litre varied from 56 cents in Alberta and Manitoba to 63 cents in Newfoundland and Labrador. Table 20 shows fuel consumption and cost by province or territory of domicile.

Table 20: Fuel Consumption and Cost by Province or Territory of Domicile, Owner Operators, 2001

	Estimated Number Reporting	Fuel Consumed	Total Cost	Average Cost Per Litre	
	No.	Litre	\$	\$	
Newfoundland & Labrador	329	24,184,766	15,296,695	0.63	
Prince Edward Island	178	13,946,003	8,140,606	0.58	
Nova Scotia	756	57,186,125	33,334,703	0.58	
New Brunswick	1,265	105,422,772	60,861,741	0.58	
Quebec	7,514	565,768,134	338,820,756	0.60	
Ontario	12,488	950,517,474	550,967,052	0.58	
Manitoba	1,577	128,095,952	71,800,213	0.56	
Saskatchewan	1,385	105,794,716	61,474,166	0.58	
Alberta	5,878	426,425,810	240,317,210	0.56	
British Columbia	4,519	225,494,652	131,480,054	0.58	
Yukon	27	1,323,785	765,512	0.58	
Northwest Territories and Nunavut	15	1,092,512	646,667	0.59	
CANADA	35,931	2,605,252,701	1,513,905,375	0.58	

Note: Some totals may not add due to rounding.

SECTION 3 - SURVEY METHODOLOGY AND DATA QUALITY

Introduction

This section describes the methodology of the Annual Motor Carriers of Freight Survey of Small For-hire Carriers and Owner Operators. Included are descriptions of the target and survey populations, the sample design, and the data processing and estimation methods. The quality of the data presented in this publication is discussed and quality indicators for some key statistics are given.

This information will provide the user with a better understanding of the strengths and limitations of the data, and how they can be effectively used and analysed. The information may be of particular importance when making comparisons with data from other surveys or sources of information, and in drawing conclusions regarding changes over time, differences between geographic areas and differences among sub-groups of the target population.

Several terms used in this chapter are defined below:

Target Population: all units (e.g. carriers) for which the information is required.

Survey Population: all units (e.g. carriers) for which the survey can realistically provide information. The survey population may differ from the target population due to the operational difficulty of identifying all the units that belong to the target population.

Survey Frame: a list of all units in the survey population that carries classification information (e.g. industrial, geographical and size) of the units. This list is used for sample design and selection

Stratification: a non-overlapping partition of the survey population into relatively homogeneous groups with respect to certain characteristics such as geographical and industrial classification, size, etc. These groups are called strata and are used for sample allocation and selection.

Sampling weight: a raising factor attached to each sampled unit to obtain estimates for the population from a sample. The basic concept of the sampling weight can be explained by using the representation rate. For example, if 2 units are selected out of 10 population units at random, then each selected unit represents 5 units in the population including itself, and is given the sampling weight of 5. A survey with a complex sample design requires a more complicated way of calculating the sampling weight. However, the sampling weight is still equal to the number of units in the population that the unit represents.

2. Data Sources and Methodology

Survey Objectives Α.

The objective of this survey is to obtain information on small for-hire carriers and owner operators in terms of their structure and performance on an annual basis.

В. **Populations**

Target Population

The target population includes all Canadian-domiciled for-hire motor carriers (companies) with annual operating revenues greater than or equal to \$30 thousand and less than \$1 million, as well as all Canadian-domiciled owner operators with annual operating revenues of \$30 thousand and more. Courier and messenger services are not covered by this survey, nor are private carriers.

Survey Population

The 2001 survey population consists of all companies on Statistics Canada's Business Register, the Central Frame Data Base (CFDB), classified as trucking companies with annual gross business income greater than or equal to \$30 thousand and less than \$1 million, or with annual gross business income of \$1 million and more if these companies are known as owner operators. In addition, the survey population includes some companies from an administrative file of 2001 tax filers, classified as trucking companies with annual operating revenues greater than or equal to \$30 thousand and less than \$1 million that are not yet found on the Business Register.

Sample Design C.

The number of trucking companies on the survey frame is large and for that reason a sample of them is selected to represent the population. The survey uses a two-phase sample design, where a large first-phase sample is selected and the second-phase sample is drawn as a sub-sample from these companies. The design of the sampling procedures used in each phase is described below.

First-Phase

The first-phase sample is drawn independently for incorporated and unincorporated companies. The list of unincorporated companies on the Business Register is classified using province/territory of domicile, North American Industrial Classification System (NAICS) code, and size (measured by annual gross business income). Companies with the same classification form a stratum within which a first-phase sample is selected. The complete list of incorporated companies on the survey frame is included in the first-phase sample.

Second-Phase

The second-phase sample is a sub-sample of the first-phase sample. The companies included in the firstphase sample are again classified using province/territory of domicile, NAICS code, and size. Companies with the same classification form a stratum within which a second-phase sample is selected.

The overall size of the second phase sample and its allocation among strata are determined to satisfy precision requirements for provincial estimates under given cost constraints. The coefficient of variation is used as the measure of precision. The sample size and the estimated population size by province or territory of domicile are given in Table 21.

Table 21: Estimated Population Size and Sample Size by Province or Territory of Domicile, Annual Motor Carriers of Freight Survey: Small For-hire Carriers and Owner Operators, 2001

	Estimated Number of Number of Carriers Carriers in Survey Selected Population (Phase 1)		Number of In-Scope Carriers Selected (Phase 2)	
Newfoundland & Labrador Prince Edward Island Nova Scotia New Brunswick Quebec	419	375	108	
	201	155	76	
	887	631	182	
	1,409	975	266	
	9,598	7,431	753	
Ontario	13,972	5,603	534	
Manitoba	1,834	874	253	
Saskatchewan	1,639	1,132	286	
Alberta	6,945	4,750	482	
British Columbia	5,335	2,911	415	
Yukon Northwest Territories and Nunavut CANADA	36	40	30	
	21	30	19	
	42,296	24.907	3,404	

In addition, tax data allows us to observe two distinct groups of businesses if they have completed a T1 record of unincorporated firms' tax files or a T2 record of incorporated firms' tax files (Canada Revenue Agency). In 2001, after examining the companies selected in the second phase of the survey, we see that the small for-hire carriers constituted 6 % T1s and 94 % T2s, while owner operators constituted 18 % T1s and 82 % T2s.

D. Data Collection and Processing

During the collection period, financial data is obtained for all units in the first-phase sample from an administrative file of tax filers. The companies included in the second-phase sample are contacted via telephone interview in order to collect operational data.

The survey data are checked for errors and inconsistencies. Problems or missing data are replaced with consistent values (are imputed) using Statistics Canada's Generalized Edit and Imputation System. The system imputes data using imputation rules that select representative data from another carrier. The data are then verified by subject matter specialists.

E. Estimation

Since only a sample of carriers was contacted for the AMCF survey, the individual values are weighted to represent the whole industry within the scope of the survey. The value of each carrier is multiplied by the weight for that carrier, and then the weighted data from all sampled carriers belonging to a given estimation domain (e.g. Ontario) are summed to obtain the estimate.

Reference Period

The reference period for collection purposes is the firm's own 12-month accounting period whose year-end occurred on any date from April1, 2001 to March 31, 2002, inclusive.

3. Data Quality

Any survey suffers from errors. While considerable effort is made to ensure a high standard throughout all survey operations, the resulting estimates are inevitably subject to a certain degree of error. The total survey error is defined as the difference between the survey estimate and the true population value for which the survey estimate aims. The total survey error consists of two types of errors; sampling and non-sampling errors. Sampling error occurs when a sample survey is carried out. Non-sampling errors arise due to various reasons other than sampling. These two types of errors are further explained below.

A. Sampling Error

The Annual Motor Carriers of Freight Survey of Small For-hire Carriers and Owner Operators is subject to sampling error. When a sample is selected from a population, estimates based on the sample data will not in general be exactly the same as what would be obtained from a census of that population.

The difference between the estimates from a sample survey and a census conducted under the same conditions is referred to as the sampling error. Factors such as the sample size, the sample design, the variability of the population characteristic under study and the estimation method affect the sampling error. In general, a larger sample size produces a smaller sampling error. If the population is very heterogeneous like the trucking industry, a large sample size is needed to obtain a reliable estimate.

B. Non-sampling Errors

The sampling error is only one component of the total survey error. Errors arising from all phases of a survey are called non-sampling errors. For example, non-sampling error can arise when a respondent provides incorrect information or does not answer certain questions or when a unit in the target population is omitted or covered more than once or when a unit that is out of scope for the survey is included by mistake or when errors occur in data processing, such as coding and capture errors.

The effects of some of the non-sampling errors will cancel out over a large number of observations, but systematically occurring errors (i.e. those that do not tend to cancel) will contribute to a bias in the estimates. For example, if carriers consistently tend to under-report their revenues, then the resulting estimate of the total revenues will be below the true population total.

As the sample size becomes closer to the population size, the sampling error component of the total survey error is expected to decrease. However, this is not necessarily true for the non-sampling error component.

In general, non-sampling errors are difficult to evaluate and special studies must be conducted to estimate them. However, certain measures such as imputation rates are easily obtained and can be used as indicators for portions of the non-sampling errors. Different types of non-sampling error together with their associated measures are discussed below.

I. Coverage Errors

Coverage errors arise when the survey frame does not adequately cover the target population. As a result, certain units belonging to the target population are either excluded (under coverage), or counted more than once (over coverage). In addition, out of scope units may be present in the survey frame (over coverage). Errors in the North American Industrial Classification Standard (NAICS) code on the survey frame may also result in either over or under coverage of the trucking industry.

II. Response Errors

Response errors occur when a respondent provides incorrect information due to misinterpretation of the survey questions or lack of correct information, gives wrong information by mistake, or is reluctant to disclose the correct information. Large response errors are likely to be caught during editing; however, others may simply go through undetected.

III. Non-response Errors

Non-response errors can occur when a respondent does not respond at all (total non-response) or responds only to some questions (partial non-response). These errors can have a serious effect if non-respondents are systematically different from respondents in survey characteristics and/or the non-response rate is high.

IV. Processing Errors

Apart from coverage, response and non-response errors as described above, errors that occur during the processing of the data constitute another component of the non-sampling error. Processing errors can arise in data capture, coding, transcription, imputation, outlier detection and treatment, and other types of data handling.

A coding error occurs when a field is coded erroneously because of misinterpretation of coding procedures or poor judgment (e.g. errors in NAICS coding). A data capture error occurs when data are misinterpreted or keyed incorrectly. For this survey, errors in financial data can occur when the data are being transcribed from the tax returns.

Once data are coded and captured, they are subject to editing and imputation of missing or erroneous values. The quality of the data depends on the amount of imputation and the difference between the imputed and the true, but unknown, values. Using invalid assumptions when developing the imputation system could result in bias in the imputed data.

The non-sampling error as a whole is only one part of the total survey error but its contribution may be important. To minimize the effect of this type of error, a quality assurance program is carried out for this survey. For instance, various quality assurance procedures are exercised at the data capture step. The data editing procedures identify some inconsistencies in the data structure and the imputation procedures correct the identified inconsistencies.

C. Some Measures of Data Quality

This section presents some indicators of the data quality of the Annual Motor Carriers of Freight Survey of Small For-hire Carriers and Owner Operators as shown in Table 2. To assist the user in evaluating the potential effect of non-response and imputation, relative imputation rates for key characteristics (number of employees, fuel consumed, and operating revenues) are presented. The relative imputation rate is defined as the proportion of the corresponding published estimate that is accounted for by imputed data. For example, assume that the total published estimate is \$25 million, composed of \$20 million from non-imputed data and \$5 million from imputed data. Then the relative imputation rate is 0.2 (\$5 million divided by \$25 million) or 20%. The lower the relative imputation rate, the more reliable the published estimate.

A total response rate is also provided. This rate is defined as the number of carriers that responded to the survey divided by the total number of in-scope units in the sample.

As a measure of the sampling error, estimated coefficients of variation (CV) for some variables are presented in Table 22. CV's for other estimates may be obtained from the Transportation Division upon request. Note that the provided CV estimates do not consider the fact that some of the data were imputed and thus may underestimate the true CV's. The CV and the relative imputation rate should be considered simultaneously to make an assessment of the reliability of an estimate.

Table 22: Quality Measures by Province or Territory of Domicile, Annual Motor Carriers of Freight Survey: Small For-hire Carriers and Owner Operators, 2001

	For-Hire Carriers			Owner-Operators		
	Response Rate (%)	Relative Imputation Rate (%)	CV (%)	Response Rate (%)	Relative Imputation Rate (%)	CV (%)
Newfoundland & Labrador	75.0			61.3		
Total Employment		13.2	17.7		32.8	8.3
Fuel Consumed ¹		26.3	23.7		41.4	9.9
Total Revenues		0.0	11.6		6.0	6.7
Prince Edward Island	92.9			82.3		
Total Employment		3.4	12.7		9.1	9.3
Fuel Consumed ¹		4.3	14.2		26.4	7.7
Total Revenues		0.0	11.5		0.0	5.3
Nova Scotia	91.7			74.0		
Total Employment		4.5	36.2		22.9	5.8
Fuel Consumed ¹		18.2	46.4		47.7	6.8
Total Revenues		0.0	12.5		0.2	5.6
New Brunswick	75.0			72.4		
Total Employment		51.1	29.9		25.6	5.3
Fuel Consumed ¹		33.2	10.1		42.7	5.6
Total Revenues		0.0	6.7		0.0	3.7
Quebec	75.3			74.0		
Total Employment		26.5	8.3		24.6	4.6
Fuel Consumed ¹		31.6	8.4		42.0	6.2
Total Revenues		0.0	6.6		0.4	3.9
Ontario	69.5			72.6		
Total Employment		24.3	23.6		19.3	10.3
Fuel Consumed ¹		39.7	15.9		42.2	18.1
Total Revenues		0.0	9.9		0.1	7.5
Manitoba	79.2			70.0		
Total Employment		19.4	20.0		26.3	7.3
Fuel Consumed ¹		66.2	25.8		46.4	8.1
Total Revenues		0.0	20.0		0.1	6.5
Saskatchewan	79.8			67.7		
Total Employment		21.8	11.8		39.1	9.7
Fuel Consumed ¹		27.5	14.5		49.2	7.6
Total Revenues		0.0	8.1		0.2	5.5
Alberta	71.0			70.9		
Total Employment		34.2	10.2		41.2	10.0
Fuel Consumed ¹		45.1	12.2		51.6	6.9
Total Revenues		1.9	9.4		0.0	5.1
British Columbia	68.3			71.0		
Total Employment		21.1	16.4		30.4	8.6
Fuel Consumed ¹		53.4	23.3		36.9	8.0
Total Revenues		0.0	7.8		2.3	6.6
Yukon	57.1			56.5		
Total Employment		41.1	15.0		53.2	7.8
Fuel Consumed ¹		17.4	4.6		73.9	9.5
Total Revenues Northwest Territories and	50.0	0.0	3.9	40.0	0.0	17.7
Nunavut	50.0	^	44.0	46.2	22.2	
Total Employment		57.2	11.3		38.3	8.2
Fuel Consumed ¹		57.2	16.2		75.3	7.6
Total Revenues	70 0	0.0	10.4	=	4.6	5.2
CANADA	73.6			71.4		
Total Employment		25.8	7.5		27.5	3.9
Fuel Consumed ¹		39.8	6.3		43.8	6.9
Total Revenues		0.3	3.4		0.5	2.8

^{1.} All the For-hire carriers in the AMCF sample (whether they had an actual annual operating revenue less or over than \$1 million) were used to calculate the response and imputation rates presented in this table. See Section on Comparability of Data for more details.

Note: The quality of the estimates is classified as follows:

- * Excellent CV is 0.01% to 4.99%
- * Very good CV is 5.00% to 9.99%
- * Good CV is 10.00% to 14.99%
- * Acceptable CV is 15.00% to 24.99%
- * Caution CV is 25.00% to 34.99%
- * Unreliable CV is larger than 35.00%

Comparability of Data

For the 1999 reference year, changes were made to the derivation of certain financial variables from the administrative tax files. The variables for which historical comparison may be affected are transportation revenues, fuel expenses, owner-operator expenses and miscellaneous expenses.

Effective for the 1998 reference year, the survey underwent a major redesign. The redesign involved major changes to the frame creation process, the sample design and the estimation strategy. The frame for 1998 was created from Statistics Canada's Business Register. The sample design at the second-phase has been optimized, and the estimation strategy now uses a calibration approach to make use of information that became available after the sample had been drawn (e.g. an updated frame is used in calculating the estimation weights to make use of updates to the Business Register since the sample was drawn). The overall effect of these changes is an improved reliability in the survey estimates. In particular, this improved reliability comes from i) an improved coverage of the target population (which results in an increase in the estimated number of in-scope companies), and ii) an improved precision in the survey estimates (i.e. lower coefficients of variation).

In order to improve the combined coverage of the trucking industry by the AMCF survey and its complement, the Quarterly Motor Carriers of Freight (QMCF) survey, a group of large companies will be included in the AMCF, effective for 1998. Since the QMCF uses the annual gross business income from the Business Register, which is not identical to the true annual operating revenues, to define the survey population, some companies in the QMCF target population (those with annual gross business income less than \$1 million, and actual annual operating revenues over \$1 million) are not included in the QMCF survey population. Although these companies do not fall into the target population for the AMCF, it was decided to include them in the AMCF survey population to improve the overall industry coverage of the two surveys. The effect of this is the addition of a small number of large companies to the AMCF survey population. Although the number of such companies is small, their large size leads to a noticeable increase in the survey estimates. In order to facilitate historical comparisons, separate domain estimates will be produced for i) companies with actual operating revenue less than \$ 1 million and ii) companies with actual operating revenue greater than or equal to \$ 1 million.

From 1995 to 1997, the survey covered for-hire carriers and owner operators with annual operating revenues greater than or equal to \$30 thousand and less than \$1 million. Starting with 1998, owner operators with annual operating revenues greater than or equal to \$1 million will also be covered.

From 1990 to 1995, the survey covered for-hire carriers and owner operators with annual operating revenues greater than or equal to \$25 thousand and less than \$1 million.

The survey data prior to the 1990 survey covered for-hire carriers with annual operating revenues of \$100 thousand or more. Owner operators were not included in the 1989 and preceding surveys.

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- . not available for any reference period
- .. not available for a specific reference period
- ... not applicable

0 true zero or a value rounded to zero

 $\mathbf{0}^{\mathbf{s}}$ value rounded to 0 (zero) where there is a meaningful distinction between true zero and the value that was rounded

p preliminary

r revised

x confidential to meet secrecy requirements of the Statistics Act

E use with caution

F too unreliable to be published

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