



Catalogue no. 11-621-MIE — No. 028

ISSN: 1707-0503

ISBN: 0-662-40386-X

## Analytical Paper

### Analysis in Brief

# Too Many Trucks on the Road?

by Gord Baldwin

Transportation Division  
1st Floor, Main Building, Ottawa, K1A 0T6

Telephone: 1 800 263-1136



Statistics  
Canada

Statistique  
Canada

Canada



## Too Many Trucks on the Road?

---

Gord Baldwin

**Review Committee:** Tim Davis, John Flanders and Penny Hope-Ross; Terry Ganton, Transport Canada

**Managing Editor:** Yvan Gervais

**Production:** Debi Soucy

**May 2005**

Catalogue No: 11-621-MIE2005028  
ISSN: 1707-0503  
ISBN: 0-662-40386-X  
Frequency: Irregular

How to obtain more information:

National inquiries line: 1 800 263-1136

E-Mail inquiries: [analysisinbrief-analyseenbref@statcan.ca](mailto:analysisinbrief-analyseenbref@statcan.ca)

Published by the authority of the Minister responsible for Statistics Canada

© Minister of Industry 2005  
Ottawa

All rights reserved. The content of this publication may be reproduced, in whole or in part, and by any means, without further permission from Statistics Canada, subject to the following conditions: that it is done solely for the purposes of private study, research, criticism, review, newspaper summary, and/or for non-commercial purposes; and that Statistics Canada be fully acknowledged as follows: Source (or "Adapted from", if appropriate): Statistics Canada, name of product, catalogue, volume and issue numbers, reference period and page(s). Otherwise, no part of this publication may be reproduced, stored in a retrieval system or transmitted in any form or by any means, electronic, mechanical, photocopy, for any purposes, without the prior written permission of Licensing Services, Marketing Division, Statistics Canada, Ottawa, Ontario, Canada K1A 0T6.

### Note of appreciation

Canada owes the success of its statistical system to a long-standing partnership between Statistics Canada, the citizens of Canada, its businesses, governments and other institutions. Accurate and timely statistical information could not be produced without their continued cooperation and goodwill.

# Too Many Trucks on the Road?

**Gord Baldwin**  
**Transportation Division**

## Summary

Since the late 1990s, car drivers have had the growing perception that the roads have become more congested with trucks.

In fact, between 2000 and 2003, the number of trucks actually decreased by 0.2% while the number of cars grew by 5.5%.

However, trucks travel much greater distances than cars. As a result car drivers are likely to see more trucks on the road than the registration counts would suggest.

In 2003, based on provincial registration data, there were 27 cars for every truck. However, based on the distances that vehicles travel, the likelihood that car drivers encounter trucks increases because trucks are driven 2.5 times more kilometres on average than cars.

The likelihood of seeing a truck varies with the day of the week, the time of the day and the location. Trucks are relatively more 'visible' during weekdays, at night and at border crossings than cars.

With the population on the rise and the economy growing, the competition is likely to get even more intense.

At border crossing points, for example, the congestion in truck traffic has already reached substantial proportions (although dedicated lines for commercial traffic may improve the situation at the actual crossing).

This paper analyzes the type of truck traffic on Canada's roads, using data on registrations and performance from the Canadian Vehicle Survey. This is a voluntary vehicle-based survey started in 1999 and conducted by Statistics Canada with funding from Transport Canada.

## Truck traffic: A case of “just-in-time”

A major factor in truck traffic on roads these days is the concept of “just-in-time” delivery of freight, where factories require delivery that’s synchronized with manufacturing processes.

The trucking industry has become so efficient that manufacturing plants and other businesses can use them as warehouses on wheels. Parts and products are scheduled to arrive as they are needed, rather than taking up space on a warehouse floor.

In addition, one of the fastest growing sources of business has been linked to cross-border trade. Road dominated as a means of transportation for trade between Canada and the United States in 2003. In terms of revenue, over 53% of Canadian exports and 79% of imports were moved by truck.<sup>1</sup>

In 2003, the roughly 2,200 long distance for-hire trucking companies based in Canada that had annual operating revenues of \$1 million or more generated \$16.8 billion in revenues, up 7.5% from 2002.

Transborder movements accounted for 22% of total shipments and 47% of revenues. Carriers hauled 8.7 million shipments across the Canada-US border in 2003, with freight totalling more than 85 million tonnes. These transborder shipments generated \$8.0 billion in revenues.

Without a doubt, Ontario is the centre of Canada’s trucking industry. In 2003, freight originating in Ontario for long-distance trucking accounted for 38% of domestic tonnage and 37% of domestic revenues in Canada.

With all this truck traffic, there appears to be a perception that congestion, especially with the competition for road space between cars and trucks, is growing in Canada since the late 1990s.

There are “public concerns that there are too many trucks on the road”.<sup>2</sup> What may be the cause? “As a result of deregulation, there are far too many trucks on the road...” is one explanation put forward.<sup>3</sup>

That’s one perception. But just how does it work out in reality?

---

1. The data in this section come from *Trucking in Canada, 2003*, Statistics Canada Catalogue no. 53-222-XIB.

2. See Western Transportation Advisory Council, *Moving Forward A Guide on the Importance of Transportation in Canada*, December, 1999, page 21; [www.westac.com/pdfs/mffreight.pdf](http://www.westac.com/pdfs/mffreight.pdf). See also a speech by Mr. Paul Szabo (Mississauga South, Lib.), “There certainly is a perception that there are too many trucks on the road and they’re impeding others’ ability to be mobile,” 37<sup>th</sup> Parliament, 1<sup>st</sup> Session, Standing Committee on Transport and Government Operations, Tuesday, April 30, 2002, [www.parl.gc.ca/InfoComDoc/37/1/TRGO/Meetings/Evidence/trgoev62-e.htm](http://www.parl.gc.ca/InfoComDoc/37/1/TRGO/Meetings/Evidence/trgoev62-e.htm).

3. See Ms. Cathy Walker, *Proceedings of the Subcommittee on Transportation Safety*, Standing Senate Committee on Transport and Communications; Issue 6—Evidence, Ottawa, Thursday, February 13, 1997, [www.parl.gc.ca/english/senate/com-e/safe-e/06mn-e.htm](http://www.parl.gc.ca/english/senate/com-e/safe-e/06mn-e.htm).

## Fewer trucks on the road

Between 2000 and 2003, the number of registered trucks decreased by 0.2% while the number of cars went up by 5.5%.

In 2003, the number of registered trucks in Canada reached 660,450. These consisted of 378,258 small trucks and 282,192 large trucks. (Small trucks ranged from 4.5 tonnes up to just under 15 tonnes, while large trucks weighed 15 tonnes or more.)

On the other hand, the country had 17.8 million registered cars.

In Canada, in 2000, there were 661,446 trucks registered: 391,291 small trucks and 270,155 large trucks. This compared to 16.8 million registered cars (on-road vehicles up to 4.5 tonnes).

In other words, for every truck registered with a provincial or territorial government in 2003, there were 27 cars. This was up from 25 cars for every truck just three years earlier.

In terms of the largest trucks such as 18-wheelers, there were 63 cars for every truck in 2003, up from 62 in 2000.

### Vehicle body types

The vehicle body types, not surprising, are quite different for the small trucks versus the large trucks. This description also helps give a better picture of the vehicles in the respective groups. Small trucks, in 2003, were made up of:

- 4% vans;
- 11% pickups;
- 81% straight trucks;
- 3% tractor trailers;
- 2% others

Large trucks, in 2003, were made up of:

- 41% straight trucks;
- 58% tractor trailers;
- 1% others.

The small truck fleet is made up of 40% gasoline users, 58% diesel and 2% other fuels. This compares with the large truck fleet where only 7% use gasoline while 93% use diesel. For more information on these topics, see *Canadian Vehicle Survey, Annual 2003*, Statistics Canada Catalogue no. 53-223-XIE.

## Trucks travel longer distances

Trucks are more 'visible' on the road not just because they are bigger. They also travel longer distances than cars, increasing the likelihood to encounter them on the road.

According to Canadian Vehicle Survey data, trucks travelled an estimated 26.6 billion km in 2000, compared with an estimated 282 billion km for cars.

Three years later, trucks travelled about 25 billion km (-7%), while the estimated distance for cars was 286 billion km (+1.5%).

This change is due to an increase in registered cars combined while truck registrations declined and a larger reduction in average distance travelled by trucks relative to cars.

In 2000, trucks were driven, on average, 3.5 times the number of kilometres driven by cars. By 2003, trucks were driven 2.5 times the average distance driven by cars. This means that car drivers are more likely to encounter a truck than the registration counts would suggest.

A car driver is more likely to see a big truck rather than a small one, even if the number of registered small trucks is higher.

In fact, the large trucks travelled 18.6 billion km in 2003, while the small trucks travelled 6.2 billion km.

For large trucks, the average annual distance was three to four times higher, reflecting their use for long-haul trucking. Large trucks put in over 66 000 km a year, small trucks about 19 000 and cars over 16 000.<sup>4</sup> In 2000, large trucks averaged over 81,000 km a year, small trucks about 18 600 and cars around 17 000 km.

### Vehicle-kilometres driven, by vehicle type, Canada, 2003

Vehicle type	Total	Annual average	Daily average
	billions of vehicle-km	km per vehicle	
Small trucks	6.2	19 144	52
Large trucks	18.6	66 640	183
Cars	286.3	16 333	45

**Source:** Statistics Canada, *Canadian Vehicle Survey, Annual 2003*, Catalogue no. 53-223-XIE, pages 26 and 30.

---

4. Statistics Canada, *Canadian Vehicle Survey, Annual 2003*, Catalogue no. 53-223-XIE, page 30.

## Trucks run mostly on weekdays

Are cars and trucks sharing the road at the same time? If they do, it could also contribute to perceptions about the volume of truck traffic.

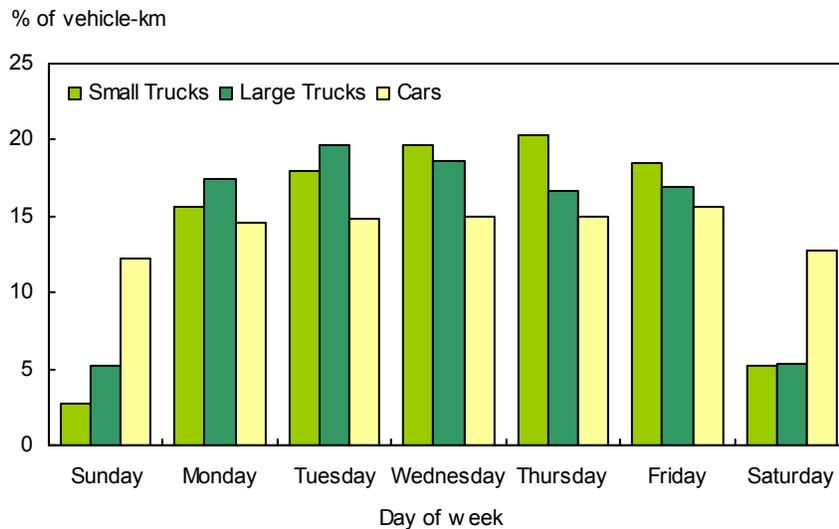
Truck traffic is more concentrated during weekdays. Small trucks travel only about 8% of their total kilometres on weekends, while large trucks travel only about 11% of their total distance.

In comparison, travel for both small and large trucks put in an estimated 20% of their total estimated weekly travel during their peak day (Thursday for small trucks and Tuesday for large trucks).

Car traffic is much more balanced. Cars travel between 12% and 16% of kilometres driven every day.

As a result on average, a car driver is likely to see more trucks on weekdays than during the weekend.

## Trucks travel mostly on weekdays



**Source:** Statistics Canada, Canadian Vehicle Survey, Annual, 2003, Catalogue no. 53-223-XIE.

## Volume of traffic varies with time of day

The volume of traffic also varies with the time of day.

Cars, small trucks and large trucks are all competing for road space primarily during the day from 6 a.m. to 6 p.m.

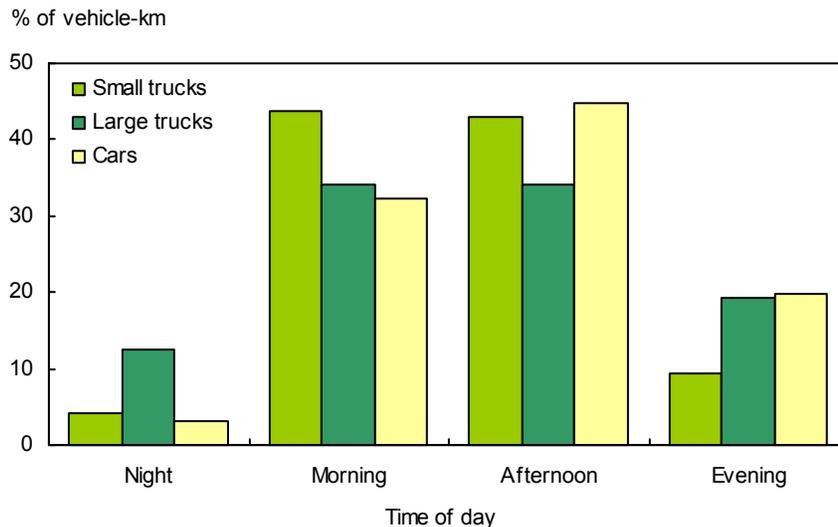
Small trucks travel 87% of their kilometres during the day, cars 77% and large trucks 68%.

Both large trucks and cars travel about one-fifth of their daily journey during the evening, that is, from 6 p.m. to midnight, compared to about one-tenth for small trucks.

Large trucks put the largest proportion of their travelling time between midnight and 6 a.m., registering about 12% of their kilometres. This compares with only 4% for small trucks and 3% for cars.<sup>5</sup>

According to the Ontario Trucking Association: "If more shippers were willing to have freight delivered at night when traffic volumes are at their lowest, some of the truck traffic could be taken out of the road during peak congestion periods."<sup>6</sup>

### All vehicle types compete for the roads in daytime



**Source:** Statistics Canada, Canadian Vehicle Survey, Annual, 2003, Catalogue no. 53-223-XIE.

---

5. Statistics Canada, *Canadian Vehicle Survey, Annual 2003*, Catalogue no. 53-223-XIE, page 44.

6. Ontario Trucking Association, *Relieving Traffic Congestion: A Discussion Paper*, Spring 2001, page 8, [www.ontruck.org/issues/docs/pdf/relievingtrafficcongestion.pdf](http://www.ontruck.org/issues/docs/pdf/relievingtrafficcongestion.pdf).

## Truck congestion at border crossings

Truck activity is not only concentrated into certain days of the week and certain times of the day. It is also concentrated in specific areas, and one key region commanding attention is the Canada-US border.

Relatively speaking, there are far fewer cars for every truck at border crossings. In 2003, there were 27 cars per truck based on registration. However, there were only two to six personal vehicles for every truck, for southbound traffic at the border crossings shown below.

Based on US Customs border crossing counts, at five selected Customs stations in 2003, there were 4.5 cars (personal vehicles) crossing into the United States from Canada for every truck.

At some busy commercial crossing such as Alexandria Bay, N.Y., and Port Huron, Michigan, the figures approached only two cars for every truck crossing.

### Vehicles crossing into the United States from Canada, by US border crossing, 2003<sup>1</sup>

US border crossing	Trucks	Personal Vehicles	Ratio of personal vehicles to trucks
Detroit MI	1,634,319	6,315,590	3.9
Alexandria Bay NY	297,220	649,161	2.2
Buffalo-Niagara NY	1,162,961	6,414,415	5.5
Port Huron MI	928,074	1,965,011	2.1
Blaine WA	365,089	2,299,636	6.3
<b>Total—all border crossings</b>	<b>6,728,228</b>	<b>30,220,184</b>	<b>4.5</b>

1. The data in this table are different from the other data in this report because:

- They are not from Statistics Canada's Canadian Vehicle Survey (CVS)
- These data would include vehicles of all nationalities crossing the border. The CVS data are Canadian registered vehicles only.
- The US border crossing data for personal vehicles include motorcycles and snowmobiles which are not included in the CVS.
- The US border crossing data can group several crossings. For example, the Buffalo-Niagara data include the Lewiston Bridge, Peace Bridge, Rainbow Bridge and Whirlpool Bridge data.

**Source:** Bureau of Transportation Statistics, *Border Crossing/Entry data*, based on data from U.S. Customs Service, [www.BTS.gov](http://www.BTS.gov).

At Canadian border crossing, the trend is the same for northbound traffic. The proportion of truck traffic is increasing at many border crossings.

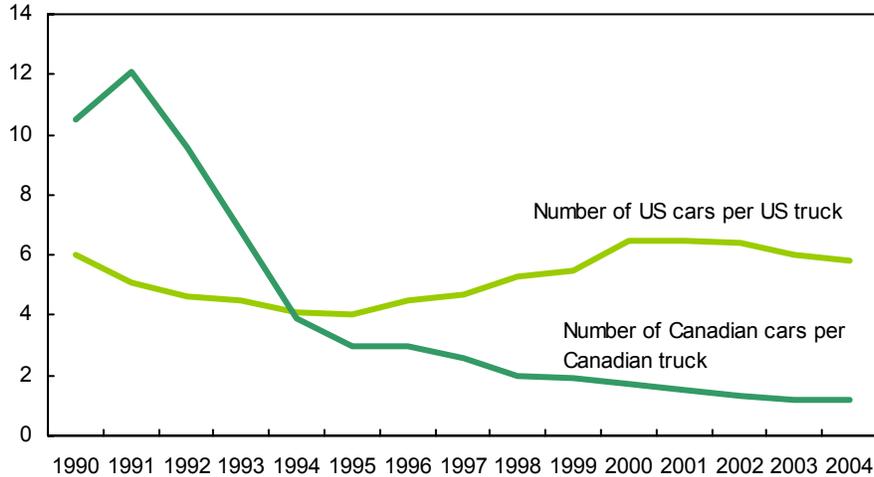
For all land crossings in 2003, there were 4.5 cars for every truck that crossed into Canada from the United States.<sup>7</sup>

Canadian crossing data show the vehicle's nationality. There were 7.2 US cars for every US truck, and 3.4 Canadian cars for every Canadian truck.

7. Statistics Canada CANSIM Table 427-0002. The frontier count is done using the information collected about the entrants into Canada recorded on forms by Canada Customs and Revenue Agency (CCRA) officials. Each port of entry sends in its administrative data according to an understanding signed by Statistics Canada and CCRA. At all ports of entry across Canada, a count is done to determine the number of vehicles (cars, trucks, motorcycles, snowmobiles and bicycles) in the case of highway and ferry points.

### Ratio of cars to trucks at Sarnia border crossing, northbound traffic, from 1990 to 2004

Ratio of cars to trucks in Sarnia



**Source:** Statistics Canada, Number of vehicles travelling between Canada and the United States, monthly, CANSIM Table 427-0002.

Over time, the number of Canadian cars relative to trucks has greatly changed at many border points. For example, at the bridge from Sarnia to Port Huron, Michigan., between 1990 and 2004, the annual ratio of US cars to US trucks ranged from a low of 4.0 to a high of 6.5.

For Canadian vehicles, the ratio ranged from a low of 1.2 to a high of 12.1.

Commercial and personal vehicles may queue up in separate lines at the border. However, the proportion of cars to trucks is likely to be a lot lower than national registration data showing 27 cars to every truck.