

The Traffic Injury Research Foundation

The mission of the Traffic Injury Research Foundation (TIRF) is to reduce traffic-related deaths and injuries.

TIRF is a national, independent, charitable road safety institute. Since its inception in 1964, TIRF has become internationally recognized for its accomplishments in a wide range of subject areas related to identifying the causes of road crashes and developing programs and policies to address them effectively.

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The Road Safety Monitor 2003

Commercial Operators and Vehicles

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Executive Summary —●

- ◆ The Road Safety Monitor is an annual public opinion survey by the Traffic Injury Research Foundation (TIRF) that takes the pulse of the nation on key road safety issues by means of a comprehensive telephone survey of a random, representative sample of Canadian drivers.
- ◆ The results from the third edition of the Road Safety Monitor are being released in a series of reports that cover several key issues. The present report focuses on commercial operator and vehicle safety.
- ◆ Results show that 37% of Canadians believe the number of large trucks on the road is a serious problem.
- ◆ 70% of Canadians believe that truck drivers who are tired by long hours of driving and trucks that do not meet legal maintenance standards are both serious problems.
- ◆ The truck safety issues of most concern to Canadians are: the use of drugs by truck drivers to help them stay awake; the ability of truck drivers to stay awake for longer periods of driving; and trucks not being maintained in a safe operating condition.
- ◆ Drivers in Quebec and the Atlantic region are more concerned about the safety risk posed by the number of large trucks on the road than drivers in either British Columbia or the Prairie region.
- ◆ Most Canadians are supportive of more stringent regulations governing the safety of commercial operators and vehicles:
 - 81% support a zero alcohol limit for commercial operators;
 - 77% support more frequent mechanical inspections for commercial vehicles;
 - 64% support random drug and alcohol testing for commercial operators;
 - 63% support re-testing of commercial operators every 5 years: and
 - 62% support the installation of event recorders in commercial vehicles to help determine the causes of collisions.
- ◆ Despite these concerns, 69% of Canadians believe commercial operators are highly skilled professionals. Twenty percent strongly agree with this. By contrast, only 6% of Canadians strongly disagree.



The Road Safety Monitor 2003 —●

The Road Safety Monitor is an annual public opinion survey developed by the Traffic Injury Research Foundation (TIRF) to take the pulse of the nation on key road safety issues.

The survey examines:

- ◆ what Canadians see as priority road safety issues and how concerned they are about them;
- ◆ their views about how to deal with these problems;
- ◆ how they behave on the highways; and
- ◆ what they know and don't know about safe driving practices.

Rationale

Information on public knowledge about road safety issues is valuable for determining the specific areas where awareness needs to be heightened and knowledge needs to be improved. Information on public attitudes toward road safety and information about driving habits and safety practices is valuable for guiding program development and policy decisions.

Annual monitoring in these areas permits an assessment of changes in knowledge and awareness as well as changes in safety practices and in the level of concern about persisting problems; it also helps identify new and emerging issues.

Structure

The TIRF Road Safety Monitor is designed to assess public opinion, awareness, knowledge, and practices on a broad range of important traffic safety issues. It includes



a core set of questions that are asked each year to provide information on trends in attitudes, opinions and behaviours. This is supplemented by a set of questions that probe more deeply into special, topical, and emerging issues.

This is the third edition of the TIRF Road Safety Monitor, and the findings are being released in a series of reports. The present report focuses on *Commercial Operators and Vehicles*. Previous reports have dealt with *Highway/Railway Crossing Safety*, and *Drinking and Driving*.



Method —●

This third edition of the TIRF Road Safety Monitor contained 109 items designed to probe the knowledge, attitudes, and concerns of Canadians with respect to a range of road safety issues and to obtain information on their driving practices. The use of a branching format and the procedure of randomly asking a selected number of alternative items allowed the entire survey to be completed in approximately 20 minutes.

The survey was administered by telephone to a random sample of Canadian drivers. Opinion Search Inc. conducted the interviews in May, 2003. Among the 5,642 households contacted in which a person was asked to participate, 3,668 (65%) refused, 70 (1.2%) terminated early, 695 (12.3%) were not qualified, and 1,209 (21.4%) completed the interview.

The data were weighted to ensure the results were representative of the national population. Based on a sample of this size, the results can be considered accurate within 2.8%, 19 times out of 20 (most conservative estimate).



Commercial Operators and Vehicles

Background

Canadian motorists share the road with a variety of vehicle types -- automobiles, light-duty trucks, vans, buses, bicycles, motorcycles, and large trucks. The different types of vehicles serve a variety of purposes, most of which can be divided into one of two primary groups -- the transportation of individuals for work or pleasure and the movement of industrial products and consumer goods. The mix of vehicles of different size and weight on the road raises concern among motorists about their safety -- particularly in interactions with large trucks.

Anyone who drives will attest to the prevalence of large trucks on the highways. Indeed, there are over 650,000 heavy trucks (those greater than 4,500 kg, including tractor trailers) registered in Canada (Canadian Vehicle Survey 2002). Although this represents only about 3.7% of all registered highway vehicles, large trucks account for 8.1% of all vehicle kilometres travelled. The largest trucks (i.e., those weighing 15,000 kg or more) average about 73,000 km per year, compared to an average of 17,000 km per year for passenger vehicles (Canadian Vehicle Survey 2002). Large trucks spend a great deal of time on the road.

The number of large trucks on the road reflects the role they play in the Canadian economy. The Canadian Trucking Alliance reports that trucking is a \$52 billion industry in Canada that employs approximately 400,000 people (CTA 2004). Trucks transport 90% of all consumer goods and foodstuffs, by value, within Canada and carry about two-thirds of trade products to and from the United States.

Although most Canadians recognize the importance of such commercial traffic on the roads, concern about the safety, particularly the safety of large trucks, has periodically been an issue, especially following a specific tragic and/or spectacular crash.

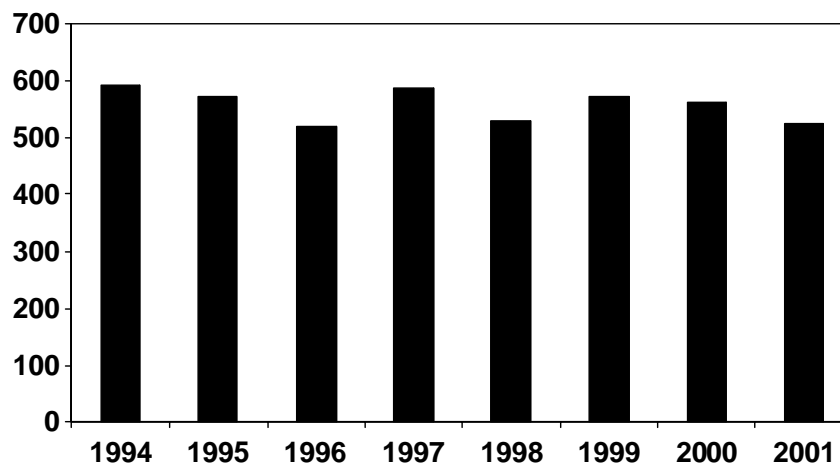


To some extent, the concern about large trucks is related to the size and weight of these vehicles. Occupants of smaller vehicles as well as those travelling on foot or on a bicycle recognize that in a collision with a large truck they are at considerable disadvantage and at risk of serious injury. This concern is substantiated by the data. In 2001, of all people killed in collisions involving heavy trucks, 87% were the occupants of the other vehicles, pedestrians, or bicyclists (Mayhew et al. 2004).

The Safety of Commercial Vehicles

Figure 1 shows the number of people killed in collisions involving heavy trucks in Canada each year from 1994 to 2001. Although the number of fatalities in the most recent year (524) is lower than in previous years, there is no consistent trend. On average, 557 people are killed each year in Canada as the result of crashes involving heavy trucks. About 12,000 others sustain injuries. This compares with an average of 3,050 total road fatalities and 228,000 injuries each year over the same period of time.

**Figure 1: Number of Fatalities Involving Large Trucks
(Canada 1994 – 2001)**



Heavy trucks are involved in a relatively small but not insignificant proportion of serious crashes on Canadian roadways -- about 18% of all road fatalities and 5% of all injuries involve a heavy truck. However, to put these numbers in perspective and determine if heavy trucks are overrepresented in collisions, it is necessary to standardize the absolute numbers by some measure of exposure. A common means of comparing the

crash experience among various types of vehicles is to divide the number of fatalities (or injuries) by the number of registered vehicles. This is reported as a casualty rate – i.e., the number of deaths (or injuries) per 10,000 registered vehicles.

Such calculations yield a fatality rate of 8.0 for heavy trucks in Canada – i.e., 8.0 fatalities per 10,000 registered vehicles of this type. This is considerably higher than the overall fatality rate of 1.5 for all types of vehicles combined. Similarly, the injury rate for heavy trucks is 177 injuries per 10,000 vehicles, which is about 43% higher than the injury rate for all types of vehicles combined (122 injuries per 10,000 vehicles).

These higher casualty rates suggest that heavy trucks are overrepresented in serious crashes. But this can be misleading because most commercial vehicles travel many more kilometres each year than do other vehicles on the roadway – i.e., their exposure is much greater. Dividing the number of fatalities involving heavy trucks by the total number of kilometres travelled by heavy trucks reveals a fatality rate of 20.9 fatalities for every billion kilometres travelled. This compares with a fatality rate of 9.0 for all types of vehicles combined. The injury rate for heavy trucks (480 per billion kilometres travelled) is actually lower than the injury rate for all vehicles combined (713).

The higher fatality rate for heavy trucks is likely related to two factors: the greater size and weight of these vehicles, relative to passenger vehicles; and, the fact that a great deal of the travel of heavy trucks is on high-speed roadways. The greater size and weight of heavy trucks increases the probability of fatality or injury in the event that they do become involved in a collision with a smaller vehicle. The speed on high-speed roadways increases the severity of a crash when it occurs.

In summary, the absolute number of fatalities and injuries in crashes involving heavy trucks is not large –18% of road fatalities and 5% of injuries involve a heavy truck. Nonetheless, this translates into over 550 fatalities and 12,000 injuries each year, so the problem is anything but inconsequential. Moreover, heavy trucks have higher fatality rates, controlling for the amount of travel.



Monitoring Canadians' Concerns

The purposes of this report are to:

- assess how concerned the public is about the risk posed by commercial operators and vehicles on the road;
- determine the specific issues involving commercial operator and vehicle safety of concern to Canadians; and,
- gauge their support for measures to improve the safety of commercial operators and vehicles.



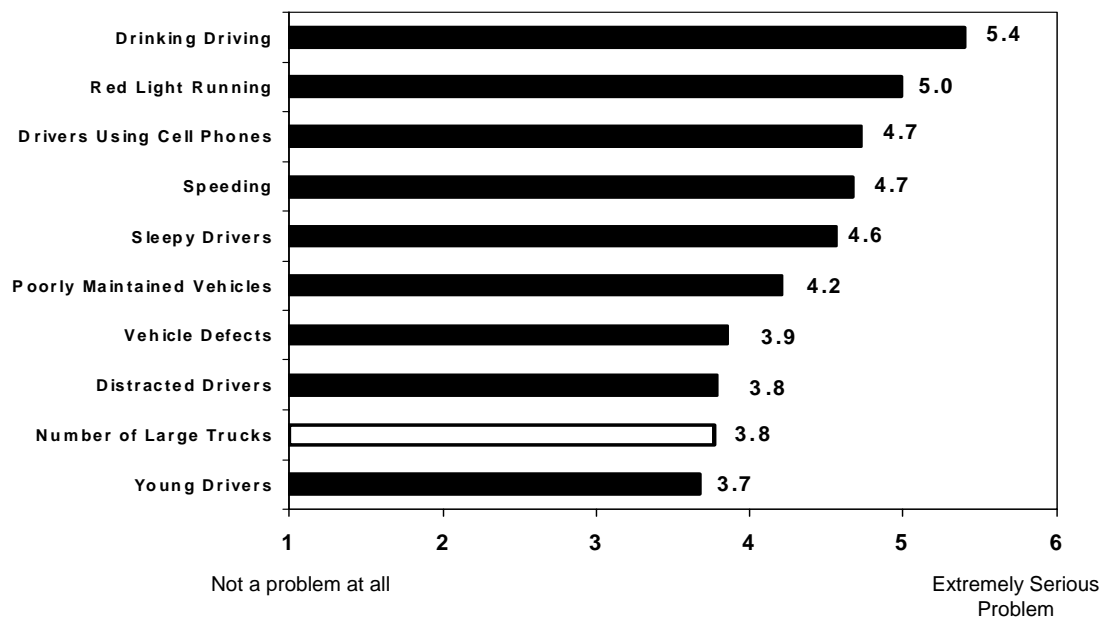
Survey Results —●

Are Commercial Operators and Vehicles Perceived as a Road Safety Problem?

A sizeable portion of Canadian drivers -- 37% -- believe that the number of large trucks on the road represents a serious or extremely serious problem.

To put this in perspective, however, the number of large trucks on the road is viewed as a far less serious problem than many other road safety issues. This is illustrated in Figure 2, which shows the average ratings of the perceived seriousness of a number of road safety issues -- 1 represents “not a problem at all” and 6 represents “an extremely serious problem”.

Figure 2: Perceived Seriousness of Traffic Safety Issues



As can be seen, drinking drivers, running red lights, drivers using cell phones, and speeding, are perceived to be a considerably more serious problems than the number of large trucks on the road.



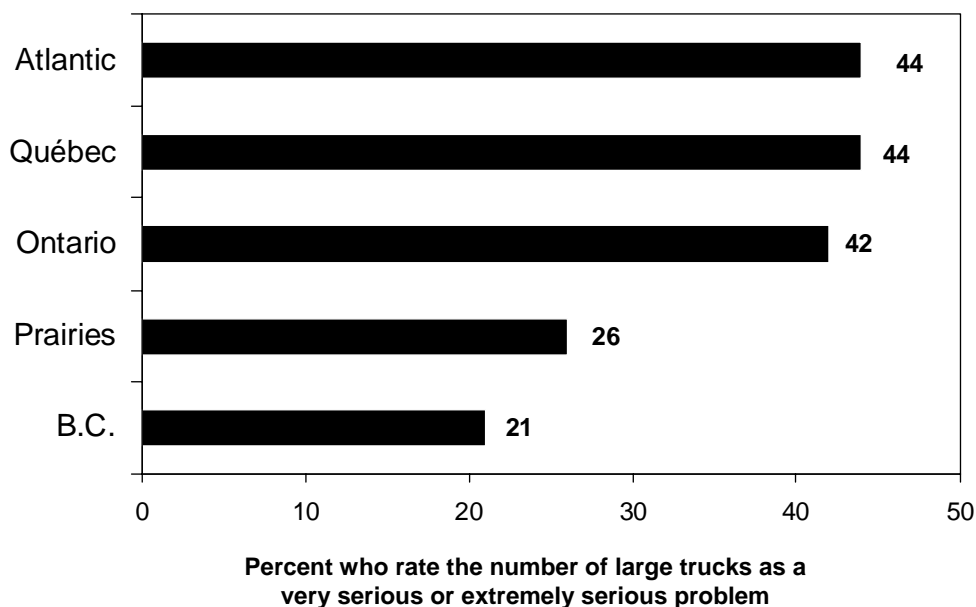
Of some interest, Canadian drivers' rating of the perceived seriousness of the problem of large trucks in the present survey did not differ from how the problem was viewed in the 2001 Road Safety Monitor.

Demographic differences. Women are more likely than men to consider the number of large trucks on the road a serious or extremely serious problem -- 43% of women believe large trucks are a serious or extremely serious problem, compared with only 31% of men¹.

Older drivers are more likely than younger drivers to view the number of large trucks on the road as a serious issue. Only 21% of those under 25 consider the number of large trucks to be a serious or very serious road safety issue. By contrast, over 50% of those 55 and older perceive it to be a serious issue.

Regional differences. The perceived seriousness of the number of large trucks on the road shows a decreasing trend from east to west across the country. Figure 3 shows the percent of drivers in each of five regions of Canada who perceive the number

Figure 3: Perceived Seriousness of the Number of Large Trucks on the Road According to Region



¹ In reporting the findings of the survey, only those differences that were found to be statistically significant ($p < .05$) are presented.

of large trucks on the road to be a serious or extremely serious problem. As can be seen, drivers in the east (Atlantic, Quebec, Ontario) view this as a more serious problem than drivers in the west (Prairies, British Columbia).

There are no differences between rural and urban drivers in terms of their perception of the seriousness of large trucks as a road safety issue.

Perceived Seriousness of Unsafe Vehicles, Speed, and Tired Drivers

Although the number of large trucks on the road is not perceived to be as serious as many other road safety problems, particular aspects of truck safety -- i.e., transport trucks that do not meet legal maintenance standards, speeding by large trucks, and truck drivers who are fatigued by driving long hours -- are perceived as being considerably more serious.

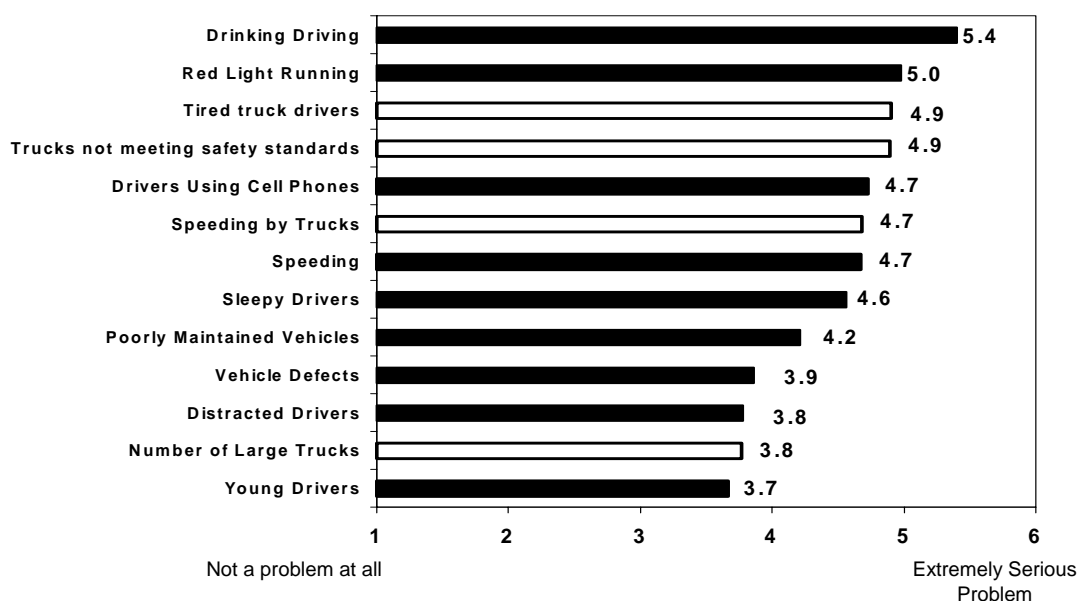
When asked to rate the seriousness of these three issues on a scale from 1 (not a problem at all) to 6 (an extremely serious problem), about two-thirds of Canadians rate these issues as serious or extremely serious problems.

Although, as noted previously, just 37% of Canadians view the number of large trucks on the road as a serious or extremely serious problem, 70% believe that transport trucks that do not meet legal maintenance standards and truck drivers who are tired from driving long hours are serious or extremely serious problems. Speeding by large trucks is rated as a serious or extremely serious problem by 64% of Canadians.

This is illustrated in Figure 4, which is similar to Figure 2, but includes the perceived seriousness of these three additional issues -- "trucks that do not meet legal maintenance standards", "truck drivers who are tired from driving long hours", and "speeding by trucks". As can be seen in Figure 4, these three issues are perceived as serious road safety problems, comparable to that of red light running and drivers using cell phones.



Figure 4: Perceived Seriousness of Traffic Safety Issues



Concern About Specific Issues in Commercial Operator and Vehicle Safety

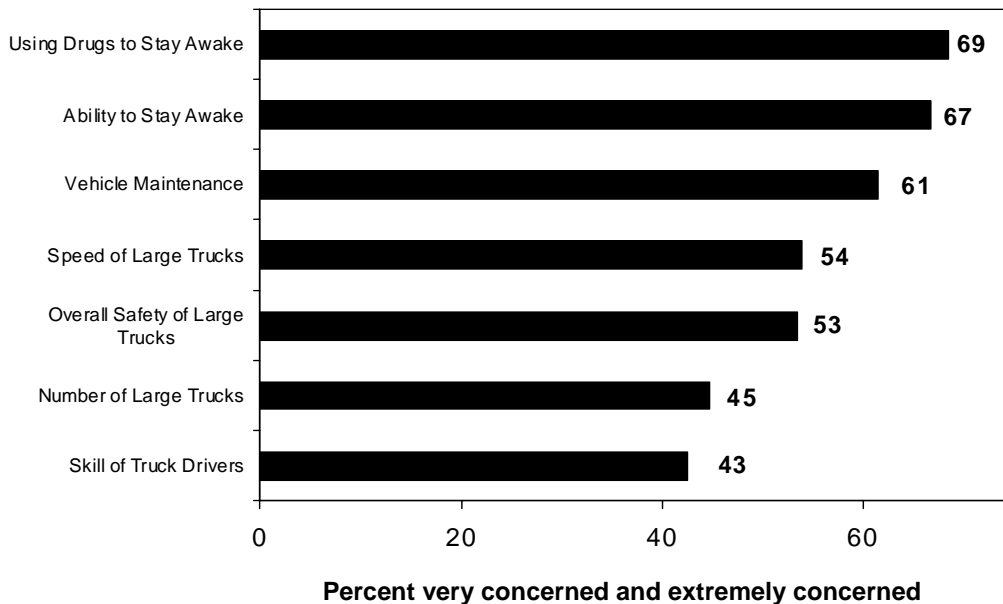
Drivers were asked to rate the extent to which they are concerned about seven issues related to the safety of commercial operators and vehicles, using a scale from 1 (not at all concerned) to 6 (extremely concerned).

The results are presented in Figure 5, which shows the percent of respondents who were very concerned or extremely concerned about each of seven issues. Canadians are most concerned about commercial operator fatigue or sleepiness and the way some operators might attempt to combat the problem. About two-thirds of respondents are very concerned or extremely concerned about the ability of truck drivers to stay alert for long periods of time and the use of drugs by truck drivers to help them stay awake.

Over half of Canadians are very concerned or extremely concerned about vehicles not being maintained in safe operating condition, the speed of large trucks on the highway, and the overall safety of large trucks. Respondents express somewhat less concern about the number of large trucks on the highway and the skill of truck drivers but these are nonetheless issues of concern to a substantial proportion of Canadian drivers.



Figure 5: Concern About Specific Commercial Operator Issues



The level of concern about these specific issues in the present survey did not differ from the extent of concern expressed in the 2001 Road Safety Monitor.

Demographic differences. Women express greater concern about all seven issues than men.

In general, younger drivers express the least concern about these issues and the extent of concern increased progressively with the age of the respondent. For example, less than half of Canadians under 25 years of age are very concerned or extremely concerned about the use of drugs by truck drivers to help them stay alert, compared to 83% of respondents 65 years of age and over who express this level of concern. The exception is concern about the skill of truck drivers where there are no differences in the level of concern according to the age of respondents.

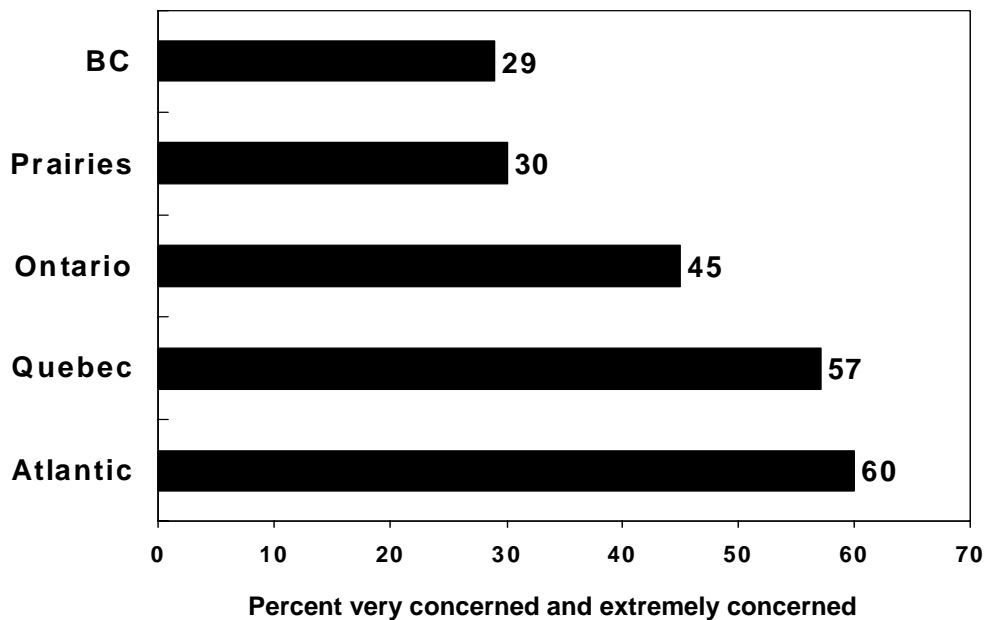
Regional differences. Concern about six of the seven issues varies according to the region of Canada in which respondents reside. The exception is concern about the skill of truck drivers where Canadians in all regions express a similar level of concern.

In general, concern about three issues -- the speed of large trucks on the highway, the number of large trucks on the highway, and the overall safety of large trucks -- increases



as one moves from west to east across the country. This is illustrated in Figure 6, which displays the percent of respondents in each region who indicate they are very concerned or extremely concerned about the number of large trucks on the road. In British Columbia, 29% of respondents are very concerned or extremely concerned about the number of large trucks on the road. This increases progressively across the country, reaching a high of 60% of respondents in Atlantic Canada.

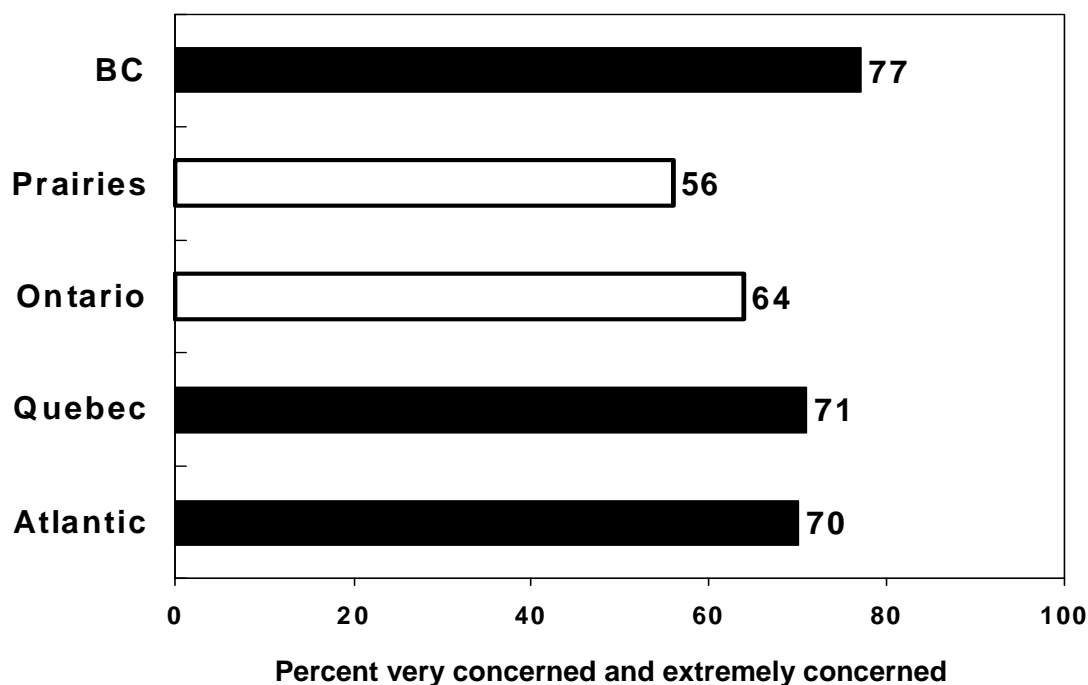
Figure 6: Concern About the Number of Large Trucks on the Road According to Region



The level of concern about the three other issues -- commercial vehicles not being maintained in operating condition, the ability of truck drivers to stay alert for long periods of time, and the use of drugs by truck drivers to help them stay alert -- also differs according to region but a different pattern emerges. For these issues, concern is lower in Ontario and the Prairie region than in Quebec and on both coasts. For example, Figure 7 shows the percent of Canadians who are very concerned or extremely concerned about the ability of truck drivers to stay alert for long periods of time. Concern is lower in the Prairie region (56%) and in Ontario (64%) than in Quebec (71%), the Atlantic provinces (70%), and in British Columbia (77%).

There are no differences between drivers in urban and rural areas in terms of their concerns about specific commercial operator and vehicle safety issues.

Figure 7: Concern About the Ability of Truckers to Stay Alert for Long Periods According to Region

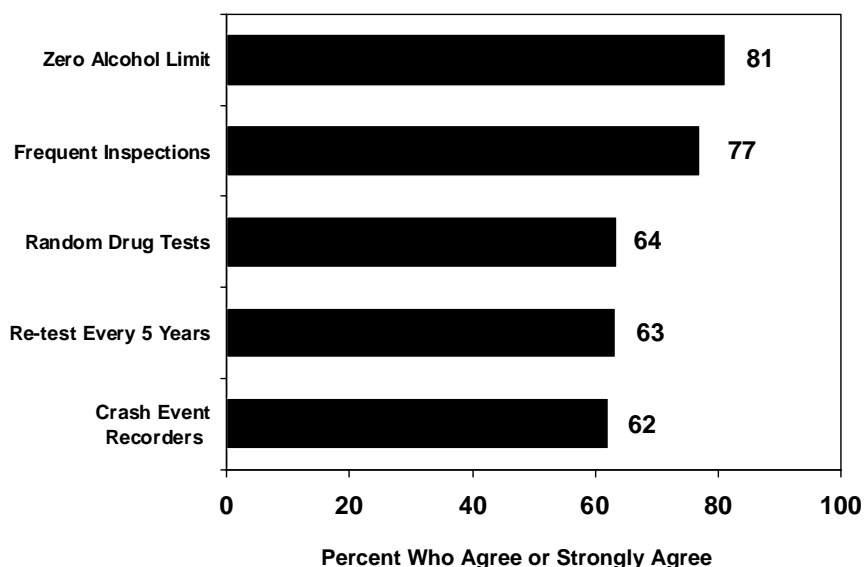


How Can Commercial Operator and Vehicle Safety be Improved?

Canadians are concerned about the risks posed by commercial operators and vehicles on the highways so it is informative to determine what actions they support to control the problem. Survey respondents were asked to indicate, on a scale of 1 (strongly disagree) to 6 (strongly agree), the extent to which they support various actions and regulations to improve the safety of commercial operators and vehicles.

Survey respondents were asked to indicate their level of support for five specific measures intended to improve the safety of commercial operators and vehicles: setting a zero alcohol limit for commercial operators, more frequent inspections of commercial vehicles, a requirement for commercial operators to submit to random drug and alcohol tests, the retesting of commercial drivers every five years, and a requirement for commercial operators to install event recorders in their vehicles to help determine the causes of crashes. The results are shown in Figure 8.

Figure 8: Percent Who Agree with Countermeasure Options



Setting a zero alcohol limit for commercial operators received the strongest endorsement with 81% of Canadians agreeing or strongly agreeing with this measure. Just over three-quarters of the survey respondents (77%) support more frequent inspections of commercial vehicles for mechanical fitness. Canadians are also supportive of random drug and alcohol tests for commercial operators (64%), re-testing commercial operators every five years (63%), and the use of crash event recorders on commercial vehicles (62%).

Demographic differences. Women express greater support than men for all five measures to improve the safety of commercial operators and vehicles. In general, support for all five measures also increases with the age of respondents.

Regional differences. Canadians from different regions of the country are consistent in their level of support for more frequent inspections of commercial vehicles, a zero alcohol limit for commercial operators, and random drug and alcohol tests. Survey respondents in Ontario and the Prairies express less support for retesting of commercial operators every five years than respondents in other regions. Support for the use of built-in event recorders was lowest among respondents from the Prairies and highest among respondents in Quebec and the Atlantic region.



Support for longer trucks. Survey respondents were also asked to indicate the extent to which they agreed with the idea of allowing trucks to pull either two or three trailers. Canadians are not supportive of trucks pulling multiple trailers. In fact, 58% of respondents disagree or disagree strongly with trucks being allowed to pull two trailers and 76% disagree or disagree strongly with trucks being allowed to pull three trailers.

Perceptions About Commercial Operators

Although Canadians are concerned about a number of issues involving commercial operators and vehicles, it is interesting to note that Canadians have a considerable degree of confidence in commercial operators. Survey respondents were asked to indicate, on a scale of 1 (strongly disagree) to 6 (strongly agree), the extent to which they agree that most truck drivers are highly skilled professionals who operate their vehicles safely.

Close to 70% of Canadians believe that commercial operators are highly skilled professionals. Twenty percent strongly agree with this; by contrast, only 6% of Canadians strongly disagree.

Demographic and regional differences. Men express greater confidence in the professionalism of commercial operators than women. Older drivers are more likely than younger drivers to view commercial operators as highly skilled professionals.

Respondents in British Columbia and the Atlantic region express somewhat stronger agreement with commercial operators being skilled professionals than drivers in other regions.



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