



The Road Safety Monitor

Commercial Operators
and Vehicles ●



**TRAFFIC
INJURY
RESEARCH
FOUNDATION**

A DRIVING FORCE FOR SAFETY

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 effectively address them.

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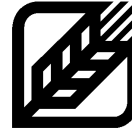
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Executive Summary —●

- ◆ 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 inaugural 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 Operators and Vehicles*.
- ◆ Results show that 41% 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 Canadian drivers are: trucks not being maintained in a safe operating condition; the ability of truck drivers to stay awake for long periods of driving; and the use of drugs by truck drivers to help them stay awake.
- ◆ Drivers in Ontario and Quebec are more concerned about the safety risk posed by commercial operators and vehicles than drivers in either British Columbia or the Prairie region.
- ◆ Most Canadians are supportive of more stringent regulations governing the safety of commercial operator and vehicles:
 - 83% support a zero alcohol limit for commercial operators;
 - 77% support more frequent mechanical inspections for commercial vehicles;
 - 69% support re-testing of commercial operators every 5 years; and
 - 67% support random drug and alcohol tests for commercial operators.
- ◆ Despite these concerns, 70% of Canadians believe commercial operators are highly skilled professionals. Nearly 20% strongly agree with this. By contrast, only 4.5% of Canadians strongly disagree.



The Road Safety Monitor —●

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.

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

The results from this inaugural edition of the TIRF Road Safety Monitor are being released in a series of reports that covers various topics. The report on *Aggressive Driving* was released in October, 2001 (Beirness et al. 2001a); the report on *Drinking and Driving* was released in November, 2001 (Beirness et al. 2001b); and, the report on *Driver Distraction* was released in March, 2002 (Beirness et al. 2002). The present report focuses on *Commercial Operators and Vehicles*.



Method —●

The TIRF Road Safety Monitor contains 99 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 alternatives in some items allowed the entire survey to be completed in approximately 20 minutes.

The survey was administered by telephone to a randomly selected sample of Canadian drivers. Opinion Search Inc. conducted the interviews in late March and early April, 2001. The final sample consisted of 1,207 completed interviews.

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

Anyone who drives will attest to the prevalence of large trucks on the highways. Indeed, there are about 661,400 heavy trucks (those greater than 4,500 kg, including tractor trailers) registered in Canada (Canadian Vehicle Survey 2001). Although this represents only about 3.8% of all registered highway vehicles, large trucks account for 8.5% of all vehicle kilometres travelled. The largest trucks (i.e., those weighing 15,000 kg or more) average about 81,000 km per year compared to an average of 17,000 km per year for passenger vehicles (Canadian Vehicle Survey 2001). Large trucks spend a great deal of time on the road.

The number of commercial vehicles reflects the role they play in the Canadian economy. The Canadian Trucking Alliance reports that trucking is a \$40 billion industry in Canada that employs close to 400,000 people (CTA website 2002). Trucks transport 90% of all consumer goods and foodstuffs, by value, within Canada and carry the majority 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 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. Of all people killed in collisions involving heavy trucks, 80% are the occupants of the other vehicles (Transport Canada 2001).



A recent report by Transport Canada (2001) indicates that heavy trucks were involved in an average of 456 fatal crashes and 8,169 personal injury crashes each year from 1994 through 1998. This means that heavy trucks are involved in about 17% of all fatal crashes and 5% of all injury crashes in Canada. Of some interest, the report also notes that collisions involving heavy trucks and the number of deaths and injuries in these collisions actually decreased slightly during the timeframe of the study despite the ever-increasing number of these vehicles.

As noted above, heavy trucks are involved in a relatively small but not insignificant proportion of serious crashes on Canadian roadways. 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 and injuries by the number of registered vehicles. This is reported as a casualty rate – i.e., the number of deaths and injuries per 10,000 registered vehicles.

Such calculations yield a fatality rate of 10.7 for heavy trucks in Canada – i.e., 10.7 fatalities per 10,000 registered vehicles of this type. This is considerably higher than the overall fatality rate of 1.6 for all types of vehicles combined. Similarly, the injury rate for heavy trucks is 235 injuries per 10,000 vehicles, which is almost double the injury rate for all types of vehicles combined (121 injuries per 10,000 vehicles).

These higher casualty rates suggest that heavy trucks are overrepresented in serious crashes. But this is 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. Although national estimates of the number of kilometres travelled by each type of vehicle are not available, a Quebec study (Auger 1999) found that if the amount of distance travelled was taken into consideration, the large disparity between heavy trucks and other vehicles was reduced substantially. The casualty rate for heavy trucks was found to be 6.7 deaths and injuries per 10 million kilometres travelled; only slightly higher than the rate of 6.3 for passenger vehicles.



The higher casualty rates 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. 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 – they are involved in 17% of the fatal crashes and 5% of the injury crashes. Nonetheless, this translates into over 450 fatal crashes and 8,100 injury crashes each year, so the problem is anything but inconsequential. Moreover, heavy trucks do appear to have slightly higher casualty rates, controlling for the amount of travel.

Monitoring Canadians' Concerns

As noted above, the prevalence of commercial vehicles on the highways and the periodic public concern about heavy trucks aroused by specific events prompted the inclusion of questions in the Road Safety Monitor to gauge public opinion on this topic. The purposes were 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 —●

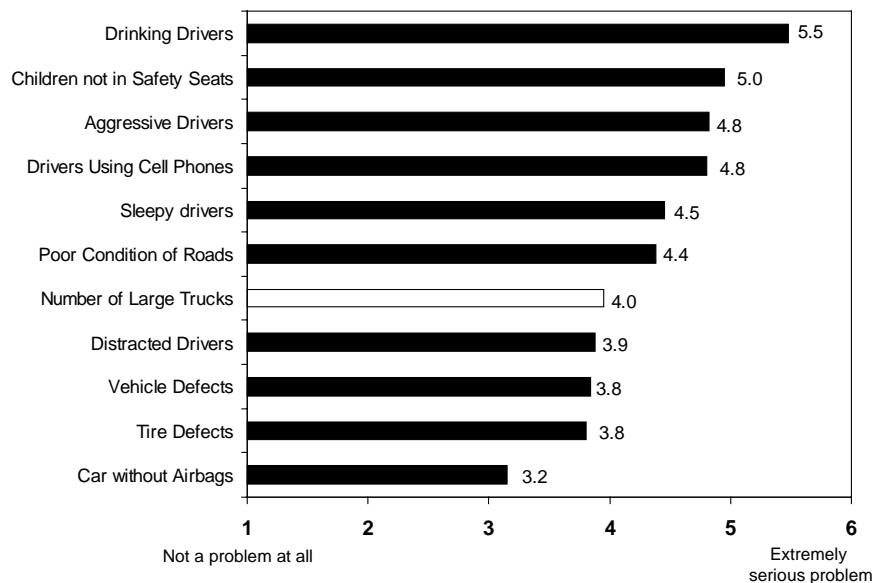
Are Commercial Operators and Vehicles a Road Safety Problem?

A sizeable portion of Canadian drivers – 41% – believe that the number of large trucks on the road represents a serious or extremely serious road safety problem.

But to put this in perspective, 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 1, 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”.

41% of Canadians think the number of large trucks on the road is a serious or extremely serious problem.

Figure 1: Perceived Seriousness of Traffic Safety Issues



As can be seen, drinking drivers are considered to be an extremely serious problem by Canadians, with an average rating of 5.5 on the 6-point scale. Other issues such as



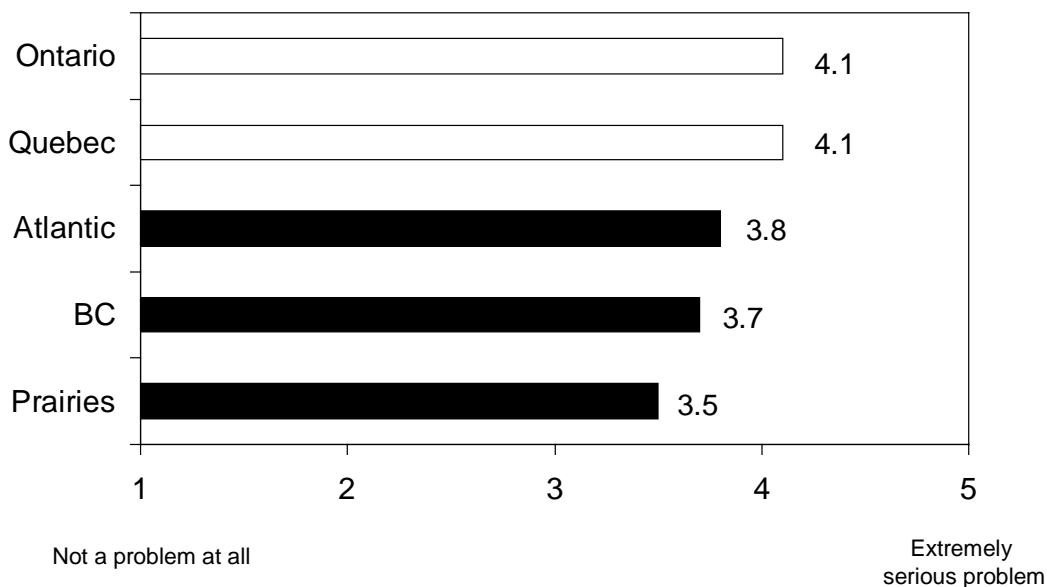
children not travelling in safety seats, aggressive drivers and drivers using cell phones also received high ratings. By contrast, the perceived seriousness of the problem of large trucks was rated much lower.

Demographic differences. Women are more likely than men to consider the number of large trucks on the road as a serious problem – 48% of women, compared to 33% of men, consider the number of large trucks on the road to be a serious or extremely serious problem¹. At the other end of the scale, men are more likely than women to believe that the number of large trucks on the road is not a problem at all (14% and 4%, respectively).

Older drivers (those aged 55 and above) are more likely than younger drivers to see the number of large trucks on the road as a serious problem. In fact, ratings of perceived seriousness increase progressively with age.

Regional differences. The perceived seriousness of the number of large trucks on the road varies across Canada. Figure 2 shows the average ratings of the perceived

Figure 2: Perceived Seriousness of the Number of Large Trucks According to Region



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



seriousness of the number of large trucks on the road in five major regions of Canada. As can be seen, drivers in Ontario and Quebec view this as a more serious problem than drivers in other regions. Drivers in the Prairie provinces perceive the problem to be less serious than drivers in the rest of Canada.

Perceived Seriousness of Unsafe Vehicles and Tired Drivers

Although the number of large trucks on the road is not rated as seriously as many other road safety problems, specific aspects of truck safety -- transport trucks that do not meet legal maintenance standards and truck drivers tired by driving long hours -- are perceived as being considerably more serious.

When asked to rate the seriousness of transport trucks that do not meet legal maintenance standards and truck drivers tired by driving long hours on a scale from 1 (not a problem at all) to 6 (an extremely serious problem), 70% of Canadians rate these issues as serious or extremely serious problems.

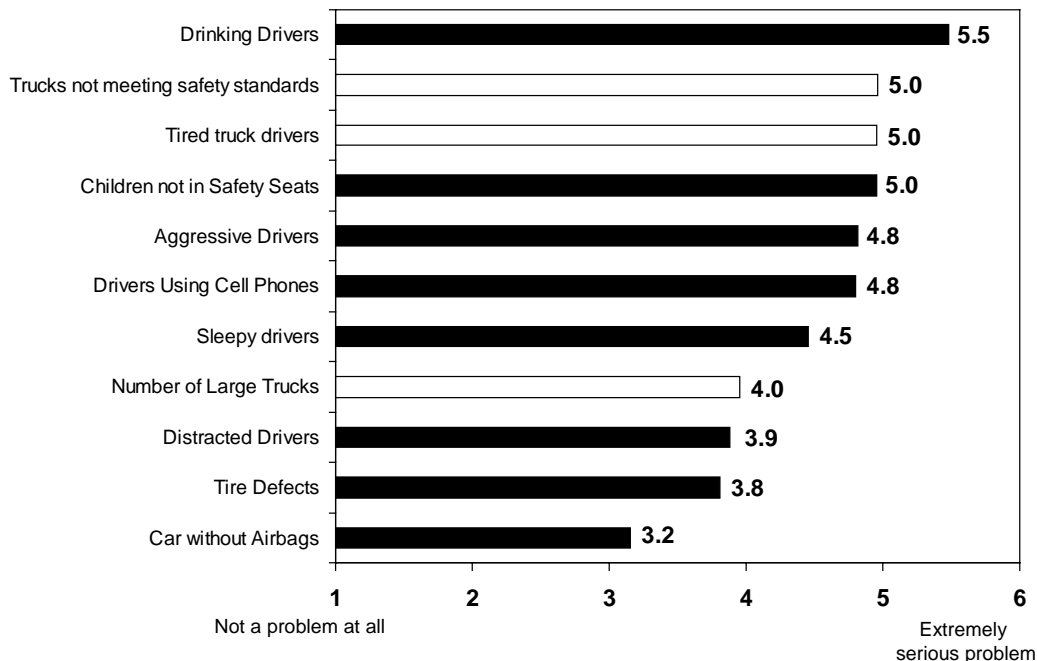
Although, as noted previously, just 41% of Canadians view the number of large trucks on the road as a serious or extremely serious problem, 70% see truck drivers who are tired as a result of long hours of driving and trucks that do not meet legal maintenance standards as extremely serious or serious problems.

70% of Canadians think truck drivers who are tired as a result of long hours of driving are a serious or extremely serious problem.

This is illustrated in Figure 3, which is similar to Figure 1, but includes the perceived seriousness of two additional issues -- “trucks that do not meet legal maintenance standards” as well as “truck drivers who are tired by driving long hours”. As can be seen in Figure 3, these two specific issues are perceived as very serious road safety problems, equivalent to that of aggressive driving and more serious than simply the number of large trucks on the road.



Figure 3: Perceived Seriousness of Traffic Safety Issues



Concern about Specific Issues in Commercial Operator and Vehicle Safety

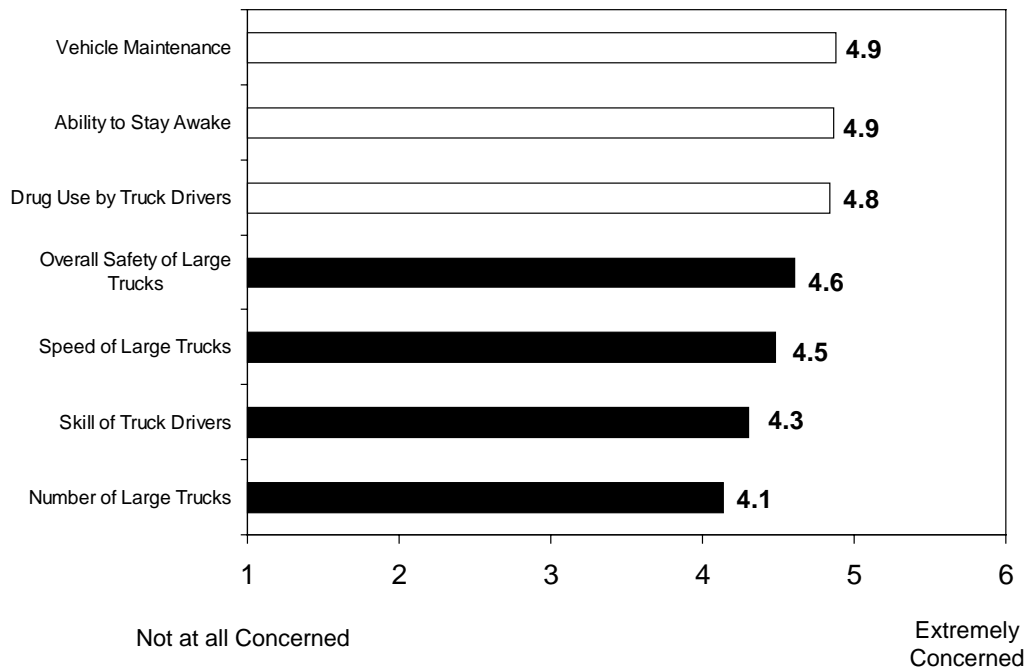
Respondents were also asked to indicate the extent to which they are concerned about seven issues related to the safety of commercial operators and vehicles, using a scale from 1 (not at all concerned) to 6 (extremely concerned).

The results are presented in Figure 4, which shows the average rating of concern for each of the seven issues. Canadians are most concerned about: vehicles not being maintained in a safe operating condition; the ability of truck drivers to stay awake for long periods of driving; and, the use of drugs by truck drivers to help them stay alert. The overall safety of large trucks, the speed of large trucks, the skill of truck drivers, and the number of large trucks are issues of somewhat less concern but are nonetheless issues of concern to Canadians.

Demographic and regional differences. In general, women are more concerned about the safety of commercial operators and vehicles than men. Older drivers are more concerned about these issues than younger drivers.



Figure 4: Concern About Specific Issues in Commercial Operator and Vehicle Safety



In general, drivers in eastern parts of Canada (Ontario, Quebec, and the Atlantic provinces) express a greater degree of concern about each of these seven commercial operator and vehicle issues than do drivers in British Columbia and the Prairie region.

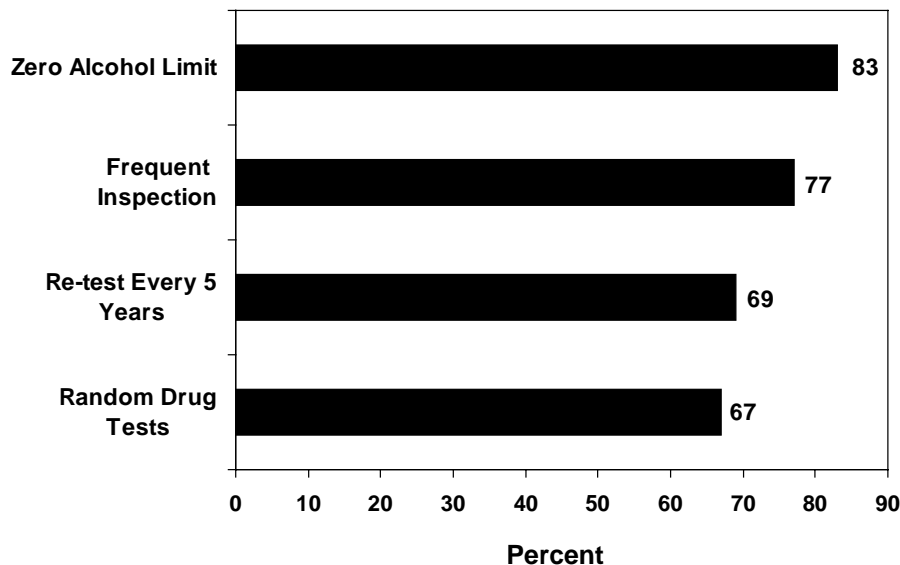
How Can Commercial Operator and Vehicle Safety be Improved?

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 four specific measures intended to improve the safety of commercial operators and vehicles: the re-testing of commercial drivers every five years, a requirement for commercial operators to submit to random drug and alcohol tests, more frequent inspections of commercial

vehicles for mechanical fitness, and setting a zero alcohol limit for commercial operators. The results are shown in Figure 5.

Figure 5 : Percent Who Agree with Regulations Governing Commercial Operator and Vehicle Safety



Setting a zero alcohol limit for commercial operators received the strongest endorsement with 83% of Canadians agreeing or strongly agreeing with this measure. Just over three-quarters of survey respondents (77%) support more frequent inspections of commercial vehicles for mechanical fitness. Canadians are also supportive of a requirement for commercial operators to be re-tested every five years (69%) as well as the use of random drug and alcohol tests for commercial operators (67%).

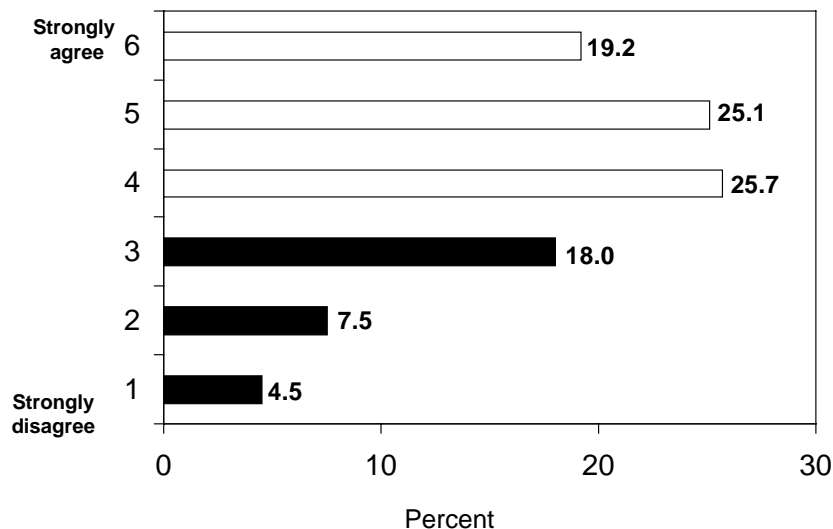
Demographic and regional differences. Women express stronger support than men for each of the specific regulations intended to improve the safety of commercial operators and vehicles. The level of support for each measure also increases with the age of survey respondents.

Canadians from different regions of the country are consistent in their level of support for the various regulations governing the safety of commercial operators and vehicles. The exception is drivers in the Prairies who are less supportive of more frequent inspections of commercial vehicles for mechanical fitness.

Perceptions About Commercial Operators

Although Canadians are concerned about a number of issues involving commercial operators and vehicles, it is interesting to note that most Canadians have 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. The results are shown in Figure 6.

Figure 6: Agreement with Statement: “Most Truck Drivers are Highly Skilled Professionals”



Seventy percent of Canadians believe that commercial operators are highly skilled professionals. Nearly 20% strongly agree with this. By contrast, only 4.5% of Canadians strongly disagree.

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

Canadian drivers in the Prairies and the Atlantic provinces are most likely to agree that truck drivers are highly skilled professionals and drivers in British Columbia and Quebec indicate less agreement.

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