Transport Canada Transports Canada

TP 14813

Final Report

TRADE AND COMPETITIVENESS ASSESSMENT OF MANDATED SPEED-LIMITERS FOR HEAVY TRUCKS OPERATING IN CANADA

(T8080-07-0230-001)

Submitted to:

Transport Canada
Tower C, Place de Ville
Ottawa, Ontario

Prepared by

Ray Barton Associates
231 Hoylake Crescent
Orleans, Ontario
K1E 2M4

In Association with
Garland Chow
Lloyd Ash

TC1002771
*

Canada

Disclaimer

This report reflects the views of the authors and not necessarily those of Transport Canada or the Councils of Ministers/Deputy Ministers Responsible for Transportation and Highway Safety.

Executive Summary

This study assesses the competitiveness impacts of electronically limiting the speed of heavy trucks in Canada. This assessment is provided for two scenarios. The first scenario is with the policy implemented only by Ontario and Quebec. The second scenario is with the policy implemented throughout Canada.

Use of speed-limiters

Speed-limiters are in widespread use throughout North America's trucking industry. Surveys in the U.S. indicate that 60% of heavy truck fleets are already speed-limited. As larger fleets are more likely to be speed-limited, the percentage of trucks that are speed-limited is estimated at 77%. Similar surveys have not been conducted in Canada, but available information indicates a similar level of usage. Nearly all large fleets use speed-limiters while most small fleets (typically less than 10 - 20 units) and a large majority of owner-operators do not use limiters or use them with high speed settings. The main reason cited for not using speed-limiters is a desire to allow the driver to retain the flexibility to change speed to suit traffic conditions.

Speed-limiter settings typically range from 100 to 112 kilometres per hour (kph), with this project measuring an average speed of 105 kph for Canadian speed-limited fleets. Results of surveys conducted in the United States (U.S.) show a slightly higher average setting. The proposals by the Ontario Trucking Association (OTA)/ Canadian Trucking Alliance (CTA) and the American Trucking Association (ATA) to mandate speed-limiters at 105 kilometres per hour (kph) and 68 miles of hour (MPH), or 109.5 kph, respectively largely reflect the current practice of larger fleets.

North American speed limits for heavy vehicles vary from 80 kph to 120 kph depending upon the jurisdiction. In total, 23 states and 4 provinces currently have posted legal truck speeds above the proposed 105 kph mandated speed-limiter setting. Trucks that operate into and through speed-limited jurisdictions would be speed-limited at 105 kph when operating in these higher speed jurisdictions unless they choose to change the speed-limiter setting prior to entering and after leaving these jurisdictions. To change the setting takes about 5 to 10 minutes and can be completed by the operator provided they have the necessary tools which can cost in the range of $1,000 to $2,000.

The safety argument for speed-limiters is that slowing down heavy vehicles improves road safety by reducing the number of collisions and mitigating the severity of collisions that do occur. In certain traffic situations, reducing truck speed can also reduce speed variability which has been shown to improve road safety. Surveys on the use of speed-limiters in North America show that fleet managers, especially larger fleet managers, are of this view.

The argument against speed-limiters is that safety can be compromised in situations where increased speed differentials between trucks and other vehicles occur, such as when passing slow moving vehicles or in merging traffic situations. Owner-operators and smaller fleet managers tend to support this viewpoint. In this context, speed differentials can be up to 15 kph where legal speed limits are 120 kph (120 kph vs. 105 kph) and greater if actual vehicle speeds, which are normally higher than posted speed limits, are considered.

Scenario 1: Ontario and Quebec mandate speed-limiters at 105 kph

Implications for Atlantic Canada

Should Quebec and Ontario mandate speed-limiters, it is estimated that about 30% of Atlantic Canada's heavy truck fleet would need to set their speed-limiters accordingly due to the interaction of the Atlantic trucking industry with Quebec and Ontario. Larger fleets are already operating at the mandated speed of 105 kph or less as part of their current fleet management practices and hence would not need to make any changes. However, owner-operators felt their safety would be adversely impacted as a result of increased truck-car interactions associated with the lower truck speed, especially when travelling in the higher speed limit jurisdictions. They also noted that in some cases their productivity could be adversely affected as they could no longer complete some deliveries they currently service within their daily Hours of Service regulations. With lower speeds they would need an overnight stop near their destination then completing the delivery the next day which could result in them losing a day's pay by the time they pick up their next load. They indicated these safety and productivity considerations would lead them to avoid Quebec and Ontario. However, due to the significant role that Ontario and Quebec play in truck traffic patterns for Atlantic Canada such actions could prove difficult as they would be ignoring a large portion of their market. This impact would be mitigated to the extent they invest the resources necessary to adjust the speed-limiter setting as they enter and leave speed-limited jurisdictions.

Implications for Western Canada

Unlike Atlantic Canada, only a small portion of Western Canada's trucking industry interacts with Ontario and Quebec. This means the majority of fleet operations in Western Canada would not be affected if Ontario and Quebec were to adopt the speed-limiter policy. It is the consultant's best estimate that less than 10% of Western Canada's heavy truck population would be affected by Ontario and Quebec mandating speed-limiters. While most large fleets in Eastern Canada and Western Canada are already speed-limited at or below the proposed 105 kph maximum speed, a significant portion of smaller fleets in the West would need to adjust their speed settings to adjust

to the 105 kph limit. Larger fleets in Western Canada are already speed-limited at 105 kph or less and hence already meet the Ontario and Quebec mandate. Many of these fleets operate between Eastern and Western Canada.

Available speed data for B.C. indicate that, for the most part, truck speeds in the province are already below the proposed 105 kph limit due to the constrains caused by the mountainous terrain. Implementing the proposed policy in B.C. would have little actual effect on truck speeds in the province.

Western Canada based owner-operators indicated that if Ontario and Quebec implemented the speed-limiter policy they would avoid operating in these jurisdictions as the slower speed for trips in Western Canada and the United States, where they do much of their travel, would put them at a higher safety risk due to increased car-truck interaction. Concern was specifically expressed about their ability to safely drive the two-lane highways in Alberta and Saskatchewan and the two-laned portions of the Trans-Canada Highway in Northern Ontario. They also noted that in some circumstances their productivity could be adversely affected on some runs where Hours of Service regulations would require an overnight stop before completing the delivery.

These safety and productivity concerns could be mitigated to the extent by which these operators invest in and use the tools that would allow the speed-limiter setting to be changed as they enter and leave speed-limited jurisdictions. It was not possible to estimate the number of owner-operators who stop operating in Ontario and Quebec as a result of a mandated speed-limiter setting in those provinces, nor the overall portion of truck traffic they represent.

Implications for Ontario/Quebec - U.S. Traffic

Canadian based companies hauling into the U.S. cannot compete with U.S. based fleets on runs within the U.S. This means mandated speed-limiters do not create any competitive issues between U.S. carriers and Canadian carriers when operating in the U.S.

Those U.S. based fleets that come into Quebec and Ontario will be required to operate these trucks with speed-limiters set at 105 kph while in either province. Larger U.S. based fleets interviewed were not concerned with this possible speed restriction as they are already operating at or below the proposed mandated speed limit. No competitiveness issues were identified with these fleets. It is noted that 47% of Canada –U.S. truck traffic (by value of goods transported) moves between Ontario and the neighbouring seven states that have truck speed limits of 65 mph or less. This means that at legal speed limits, this traffic would be unaffected by the proposal.

Owner-operators, on the other hand, were very much concerned with being speed-limited at 105 kph. Typically owner-operators drive on longer runs that expose them to states that have higher speed limits. Their primary opposition to mandated speed-limiters relates to safety concerns due mainly to increased car-truck interaction caused by limited passing ability and increased speed differentials. They also noted that in some cases their productivity could be adversely affected as they could no longer complete some deliveries they currently service within their daily Hours of Service regulations. This could cause them to overnight near their destination and completing the delivery the next day which could result in them losing a day's pay by the time they pick up their next load. The majority (80%) of the owner-operators interviewed indicated that to avoid being speed limited they would no longer haul into Quebec or Ontario. This may limit competition to the extent that these operators do avoid operating in these jurisdictions. Their concerns would be mitigated to the extent they decide to purchase and use the tools necessary to change speed-limiter settings as they enter and leave speed-limited jurisdictions.

Scenario 2: Speed-limiters mandated nationally at 105 kph

The triangular movement operated by most Atlantic Canada based fleets (to U.S., then to Ontario and then back to Atlantic Canada), and their owner-operators, would mean their vehicles would fall under the Quebec/Ontario requirement. There would be limited incremental impact to Atlantic Canada – U.S. traffic if the policy were to be mandated nationally beyond an Ontario-Quebec only mandate. Trade data indicate that only 1% of the total national value of U.S. imports arrives directly to Atlantic Canada and much of these imports enter from neighbouring states that have posted speeds of 65 mph, the proposed mandated speed limit.

A national mandate would have more affect on Western Canada than Atlantic Canada. An estimated 90% (or more) of Western Canada trucks would be, for the most part, unaffected by the Ontario/Quebec mandate. However, if the mandate were extended nationally, then all heavy trucks would be speed-limited at 105 kph. Many smaller fleets and owner-operators in Western Canada do not set upper speed limits or set them near 110 kph. However, company policy frequently calls for these vehicles to be operated in the range of 102 to 105 kph. The higher speed is allowed to provide additional speed when passing slow moving vehicles, especially on two-lane highways. In this context, both Alberta and Saskatchewan have quite extensive networks of two-lane highways.

Many states south of the Prairies have higher speed limits of 70 mph and 75 mph. All truck traffic moving between Canada and the U.S. would be speed-limited at 105 kph, raising the safety and productivity concerns previously noted by owner-operators and smaller fleets. U.S. based owner-operators noted that due to these concerns, they would be at a disadvantage to those operating entirely in the United States and therefore not speed-limited. As a result, they would stop operating into Canada. Again,

this would be mitigated to the extent they are prepared to invest in and use the tools required to make changes as they enter and leave speed-limited jurisdictions.

Some of the smaller western based fleets noted they currently operate at 110 kph where it is legal to do so in Western Canada and the adjoining states. Fleet managers and owner-operators operating on these highways with runs that are currently at or near the Hours of Service limitations would be the most adversely affected as lower speeds would not allow them to make their delivery before the driver required a major rest break. Fleet managers indicated they would adjust their schedules accordingly to accommodate the changes or adjust the client's delivery schedule where mutually agreeable. Only a few of these fleet managers indicated this as a concern and indicated the impact was "manageable". It is possible that this concern would keep some smaller fleets and owner-operators from operating into Canada as a means of avoiding this problem. Again, this could be mitigated to the extent they are prepared to invest in the resources required to change the speed-limiter setting as they drive into and out of speed-limited jurisdictions.

Truck traffic operating within B.C. would, by and large, not be affected by a national mandate as truck speeds on most highways in that province are already below 105 kph. As well, B.C. truck traffic to and from the U.S. mostly moves through the states of Washington, Oregon and California that have maximum truck speed limits of 55 mph (80 kph) and 60 mph (96 kph). Trucks should already be operating at speeds below the 105 kph mandated speed. Nevertheless, trucks operating to/from the U.S. mid-west would be operating in the higher posted speed states for a portion of their trips, raising the safety and productivity concerns noted earlier for this group.

Impact on trucking industry competitiveness

Overall, there could be some impact on trucking industry competitiveness within speed-limited jurisdictions provided sufficient numbers of operators were to avoid such jurisdictions. Such actions would, in effect, reduce competition in these jurisdictions by reducing the number of competitors. This would be mitigated to the extent that operators choose to invest in and use the tools required to changes the speed-limiter setting as they enter or leave speed-limited jurisdictions or ultimately decide to operate speed-limited.

ATA recommended mandated speed of 68 mph (110 kph)

The ATA has recommended a mandated speed-limiter setting of 110 kph (68 mph) rather than the limit of 105 kph (65 mph) recommended by the OTA/CTA. Both of these limits appear to be based on the common practices of larger fleets in each country. Adopting these limits is a reflection of what the industry, by and large, already does.

The interviews and analysis conducted as part of this project did not indicate any specific reasons why different limits could not be implemented. However, many of those interviewed indicated that in the interests of harmonization one limit should be adopted by both countries. This would mean there would only be one upper speed setting to work with throughout North America, allowing this setting to be set at the factory ('hard-wired") and therefore more tamper resistant, thereby easing enforcement difficulties and increasing compliance. It would also mean that operators would not have any reason to invest the time and money required to adjust limiter settings as they travel from one country to the other.

Driver recruitment and retention

Concern has been expressed that fleets operating into speed-limited jurisdictions could lose drivers to fleets not operating in such jurisdictions. This could affect the ability of these firms to move freight and hence potentially lose market share.

The owner-operators interviewed felt that such a shift of drivers could occur, reflecting the results of an OOIDA survey on the topic where 81% of drivers indicated they would prefer to work for fleets that are not speed-limited all other things being equal. However, this view was not shared by large fleet managers and most small fleet managers. They indicated it was the overall pay package that the driver considers including such factors as mileage rate paid, total miles driven each month, quality of equipment and fringe benefits. It was their opinion that being speed-limited would not unduly affect their ability to recruit and retain drivers.

A large scale, scientifically designed survey of drivers concerning their previous employment decisions and employment expectations would be required to quantify the extent to which speed-limiters can be an effective driver recruitment and retention tool. However, the qualitative information available indicates the ability to attract drivers via this means is quite limited.

Potential economic impact on the trucking sector

A costing analysis performed as part of this study shows that the increased fuel and vehicle operating costs of travelling at speeds above 105 kph outweigh the increased

productivity benefits. As a result, the main economic impact on the trucking industry would be a net savings in fuel and other vehicle operating costs. In this context, fuel savings are estimated at approximately 228 million litres per annum for a nationally mandated speed limit of 105 kph. Depending upon the price of fuel, this would result in a cost saving in excess of $200 million per annum.

Fleets and owner-operators could have some runs adversely affected where these runs are currently at or near Hours of Service limits as they would have to overnight before making the delivery adding extra cost losing as much as one day's worth of productivity. However, only a few fleets interviewed indicated this as a concern. Those operators with such runs would need to adjust their operations accordingly. Fleets managers indicated they could do this without major implications as long as the speed setting was 105 kph. Mandated speeds lower than this would be more problematic. A detailed audit of several firms would be required to quantify these costs. Owner-operators felt that, where this occurred, it could essentially cost them a day's pay. However, such situations would appear to be limited.

Impact on shippers

The majority of freight being moved is already being transported by companies already speed-limited at 105 kph or less. There is obviously no impact on shippers using these companies to move their freight. This includes their just-in-time deliveries. Where the current fleet speed policy is above 105 kph companies interviewed indicated they would make any adjustments necessary so there would not be any negative impact on their clients. As well, the interviews conducted as part of this study indicate that mandated speed-limiters would not keep larger fleets from operating into such jurisdictions. While owner-operators indicated they would avoid such jurisdictions the numbers that actually do out of the total availability of trucks (especially if speed-limiter settings can be adjusted as trucks enter and leave speed-limited jurisdictions) should not affect competitiveness as far as shippers are concerned.

Overall, this indicates there would be minimal impact on shippers located within a speed-limited jurisdiction that ships with delivery timelines within legal speed limits. The proposed mandated speed-limiter setting of 105 kph would have limited or no impact on such timelines.

Impact on engine manufacturers and truck assemblers

Under the proposal, the same manufacturing and assembly procedures currently used would still apply so there would not be any impact on engine manufacturers and truck assemblers.

Table of Contents

Executive Summary 3
Table of Contents 10
List of Exhibits 11
1.0 Background 12
2.0 Objective and Scope 12
2.1 Objective 12
2.2 Scope 12
3.0 Overview of the Trucking Industry 13
3.1 Economic importance of trucking 13
3.2 The For-hire Industry 14
3.3 Private Trucking 14
3.4 Numbers of truck drivers and owner-operators 15
4.0 North American Truck Speed Limits 16
5.0 Canada- U.S. Trade 17
5.1 Value and mode share 17
5.2 Truck Crossings 17
5.3 Travel by U.S. based trucks 19
5.4 Statistics Canada Trade Data 19
6.0 Use of Speed-limiters 25
6.1 Introduction 25
6.2 ATRI Survey 25
6.2 OOIDA Foundation Survey 26
6.3 TRB Survey 26
6.4 Project Survey 27
7.0 Speed-limiters and productivity 29
8.0 Competitiveness Issues 30
8.1 Scenario 1: Ontario and Quebec only mandate speed-limiters at 105 kph 30
8.2 Scenario 2: Canada wide mandated speed-limiters set at 105 kph. 36
8.2.2 Implications for Ontario-Quebec 37
8.3 ATA recommended mandated speed of 68 mph (110 kph) 38
9.0 Driver Recruitment and Retention 39
10.0 Potential economic impact on the Canadian trucking sector 40
11.0 Impact on shippers 41
12.0 Impact on engine manufacturers and truck assemblers 41
13.0 Summary and Conclusions 42

List of Exhibits

Exhibit 3.1 Trucking Industry Structure and Revenues, 2003 13

Exhibit 5.1 Value of exports to the U.S. by truck (2006) 17

Exhibit 5.2: Number of trucks entering Canada from the U.S. (2007) 18

Exhibit 5.3 Split between Canadian based and U.S. based trucks entering Canada by province (2007) 18

Exhibit 5.4: Value of Goods Imported and exported from/to United States by Truck ($ millions) (2006) 19

Exhibit 8.1 For-hire Trucking Industry Revenues $ Millions (2005) 30

Exhibit 8.2: Revenues Earned by the Atlantic Region trucking industry by movement 31

Exhibit 8.3: Revenues Earned by the Prairie Region trucking industry by movement 33

Final Report

TRADE AND COMPETITIVENESS ASSESSMENT OF MANDATED SPEED-LIMITERS FOR HEAVY TRUCKS OPERATING IN CANADA

1.0 Background

Federal, provincial and territorial governments are currently examining the feasibility of mandating truck speed-limiters. This is a follow-up to a proposal by the Canadian Trucking Alliance calling for implementation of a nation-wide speed limit policy set at "no more then 105 kilometres per hour (kph)" for heavy duty trucks. A similar proposal by the American Trucking Association with speeds limited at 68 miles per hour (109 km/hr) is under consideration by the Federal Motor Carrier Safety Administration.

Transport Canada, on behalf of the provinces and territories, is undertaking a review of the implications of a speed-limiter mandate from several perspectives. This report examines the impact of this policy on trade flows and industry competitiveness between jurisdictions that mandate speed-limiters and those that do not.

2.0 Objective and Scope

2.1 Objective

The purpose of this study is to assess the trade and competitiveness impacts of electronically limiting the speed of trucks in Canada. This assessment is to be undertaken under two scenarios. The first scenario is with the policy implemented only by some provinces (e.g. Ontario and Quebec). The second scenario is with the policy implemented throughout Canada.

2.2 Scope

The scope of work for this project is as follows:

- Examine the impacts (intra-provincial, inter-provincial and North American) and industry competitiveness on the trucking industry and key industries served by trucking.
- Provide a national view of the trade and economic impacts within the trucking industry associated with a speed-limiter mandate as well as a regional view of these impacts.
- Examine the impacts on key segments of the long-haul trucking industry in Canada (for hire, private, owner-operator)
- Examine the impacts of unilateral action by a jurisdiction (or jurisdictions) to mandate speed-limiters.

3.0 Overview of the Trucking Industry

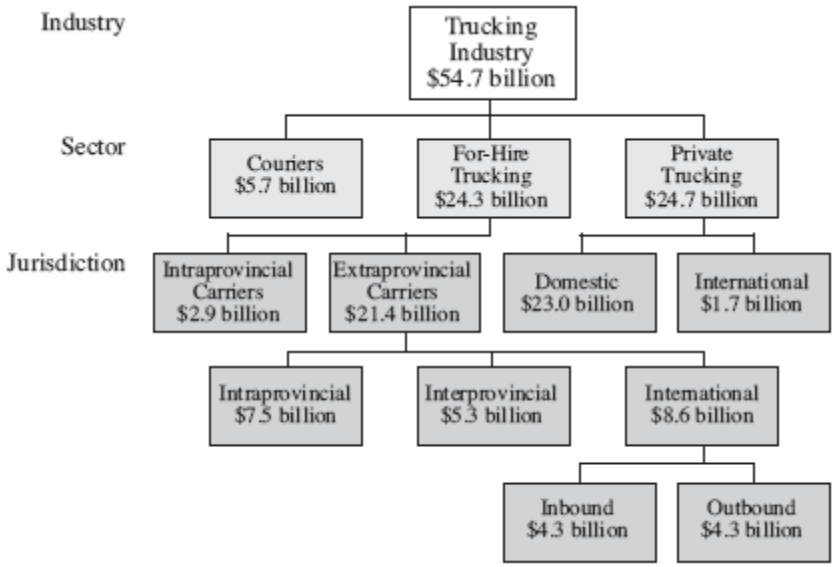
3.1 Economic importance of trucking

Trucking is of vital importance to the economies of Canada and the United States. Virtually every part of the economy depends upon trucking in some way. In Canada, in 2006, commercial transportation accounted for 4.3 % of the value-added GDP. Trucking was the most important industry accounting for 1.4 % of the total, followed by rail at 0.6% and air at 0.4%[1]. Within the U.S. the trucking mode accounts for 69% of goods transport, based on the value of the goods transported[2].

3.2 Industry size and makeup

The trucking industry consists of two main sectors: the for-hire sector which has historically been defined as consisting of those companies that haul freight owned by others, for compensation, and the private sector consisting of those companies who primarily haul their own freight, but may, from time to time, haul other people's goods for compensation. Canada's trucking industry generated approximately $54.7 billion in revenues in 2003 as illustrated in Exhibit 3.1.

Exhibit 3.1 Trucking Industry Structure and Revenues, 2003



Source: Transport Canada, Transportation in Canada 2004 Annual Report

[1] Transport Canada, Transportation in Canada 2006
[2] Freight in America, U.S Department of Transportation, Bureau of Transportation Statistics

3.2 The For-hire Industry[3]

Canada's for-hire trucking industry consists of approximately 9,300 for-hire trucking fleets. In 2005, these fleets had total revenues of approximately $27 billion. In comparison, in 2006, there were 750,000 U.S. Interstate motor carriers in the United States including for-hire fleets, private fleets, and fleets carrying U.S. mail and owner operators[4]. The U.S trucking industry's revenues are estimated $646 billion, about 12 times that of Canada's.

As with a number of other industries, trucking in Canada is characterized by a highly skewed revenue distribution. While carriers with annual revenues of $1M or more account for 35% of the number of carriers, they account for 94% of total revenues[5]. The U.S industry has the same skewed distribution, with a large number of small fleets.

The majority of trucking occurs in Canada in Ontario and Quebec, with fleets based in these two provinces accounting for nearly 60% of industry revenues[6].

General freight operations accounted for 60% of the transportation activities of Canada's for-hire carriers in 2005. About two-thirds of this revenue came from truckload (TL) carriers and one-third from less-than-truckload (LTL) carriers. Specialized freight accounted for about 18% of revenues, followed by liquid bulk at 9%.

3.3 Private Trucking[7]

In dollar terms, the private and for-hire trucking sectors are nearly the same size. However, there are some major differences in their make-up as well as some interesting similarities. Private trucking is dominated by a large number of small fleets operating in and around urban areas, where it holds an 85% share of the urban trucking market. The majority of fleets operating in and around urban areas consist of 1 or 2 vehicles and are typically straight trucks[8]. As haul distance increases, private trucking's market share drops to about 50% at trip distances of 200 km; and to about 10% at distances of 2000 km and greater. Truck size increases as trip distances increase to take advantage of the economics of the larger vehicles, primarily tractor-trailers, over these haul distances. On these

[3] Contents of this section are from the Statistics Canada Report Trucking in Canada 2005 Catalogue Number 53-222-XIE unless otherwise noted.
[4] American Trucking Trends 2005-2006. American Trucking Associations.
[5] To earn $1 million in revenues per annum a fleet would typically operate 5 to 8 tractor-trailers.
[6] This is based on the headquarters location of fleet.
[7] Contents of this section are from Profile of Private Trucking in Canada, January 1998. Prepared for Private Motor Truck Council of Canada by L.P Tardif & Associates.
[8] Quebec statistics indicate there are 33,135 private (or primarily private) fleets in the province operating 62,416 units over 3,000 kg. Average fleet size is 1.9 vehicles. Two-thirds of the purely private trucking companies operate with a 160 km radius.

longer haul distances private trucking closely resembles for-hire trucking. Private trucking accounts for approximately 17% of total owner-operators operating in Canada[9].

For traffic between Ontario and Quebec, private fleets account for 30.4% of all truck traffic on a vehicles of kilometres of travel (VKT) basis. These vehicles would therefore need to be speed-limited if Ontario and Quebec were to mandate speed-limiters. However, outside of Ontario and Quebec private fleets account for a much smaller portion of total trucking activity. The Ministry of Transportation Ontario (MTO) Commercial Vehicle Survey indicates that, on a VKT basis, private trucking accounts for only 4.8% of international truck traffic. This traffic is mainly to nearby neighbouring states. This means only a very limited portion of private trucking moving within or though Ontario and Quebec travels in U.S. jurisdictions. Overall, private trucking is much less exposed than for-hire trucking to any competitiveness issues with operating in both mandated and non-mandated speed-limiter jurisdictions because of their lower level of inter-jurisdictional activity.

3.4 Numbers of truck drivers and owner-operators

The Canada Labour Force Survey 2006 estimates Canada's truck driver population at 283,000. Of these 189,000, or 66.8%, are estimated to be tractor trailers drivers while the remainder are straight truck drivers[10]. Statistics Canada estimates there are 38,000 owner-operators in Canada. These are mainly tractor-trailers owners and account for approximately 20% of tractor-trailer drivers. They therefore constitute a significant portion of the Canadian intercity trucking industry. In the U.S., there are an estimated 350,000 to 390,000 owner-operators[11], about 10 times as many as in Canada. Owner-operators tend to be used more frequently on longer hauls.

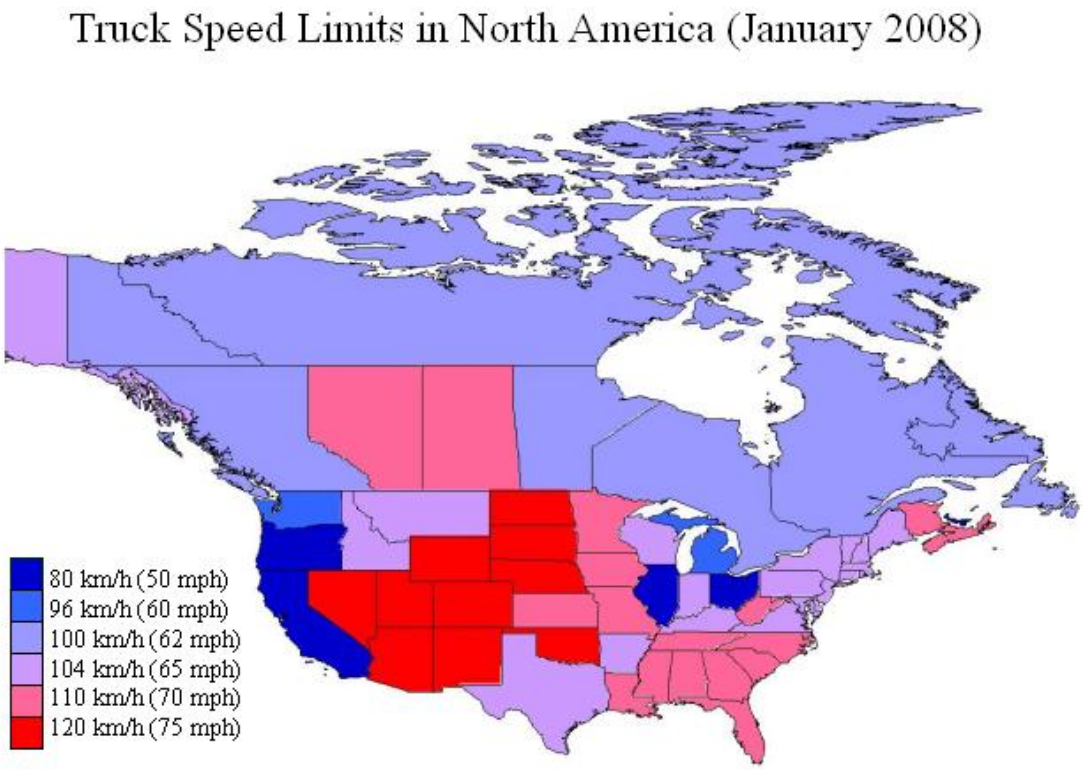
[9] Based on Table 10, Statistics Canada Special Report on Small Fleets
[10] Based on CTHRC unpublished reports.
[11] Source: Owner Operators and Independent Drivers Association

4.0 North American Truck Speed Limits

Each Canadian province as well as each U.S. state sets their own speed limits. This has resulted in a number of different maximum speed limits for trucks across North America. These speeds vary from 80 kph (50 mph) to 120 kph (75 mph)[12].

Within Canada, Ontario and Quebec have maximum speed limits of 100 kph on multi-laned highways while the provinces of Nova Scotia, New Brunswick, Saskatchewan and Alberta have maximum speed limits of 110 kph on their multi-lane highways. Manitoba has recently approved, and will soon be implementing, a posted speed limit of 110 kph on multi-laned highways west of Winnipeg and on the main highway south from Winnipeg to the U.S. border.

Many of the states adjoining Ontario and Quebec have maximum speeds of 65 mph (104 kph) or lower, while the Western and Southern states tend to have the higher speed limits. The following map illustrates the maximum truck speed by province and state.



[12] This is the maximum speed limit allowed on any road within the province or state as of January 2008. These roads tend to be Interstate highways in the United States and major interprovincial routes in Canada. Many roads would have maximum posted speeds less than the values shown

5.0 Canada- U.S. Trade

5.1 Value and mode share

The United States is by far Canada's largest trading partner, accounting for 69% (by value) of Canada's total trade with the world in 2006. In that year, total trade with the U.S. totalled $575 billion[13]. Truck is the dominant mode of transport, accounting for 61% of this trade, followed by rail at 17%, pipeline at 13%, air at 5% and marine at 4%.

Exhibit 5.1 indicates the top commodities exported, by value, by truck from Canada to the United States in 2006. Automobiles and auto parts form the largest share of the exports, followed by other manufactured goods.

Exhibit 5.1 Value of exports to the U.S. by truck (2006)

Commodity group	Value ($ millions)
Automobiles & other transport vehicles	41,178
Machinery & electrical equipment	34,721
Other manufactured & misc. goods	31,644
Base metals & articles of base metal	19,658
Plastics & chemical products	18,353
Agricultural & Food Products	16,309
Forest products	13,369
Cement & non-metallic products	2,264
Petroleum products	2,062
Waste & scrap	1,597
Minerals, ores & concentrates	556
Coal	6
Iron ore & concentrates	0
Grand Total	181,716

Source: Statistics Canada International Trade data

5.2 Truck Crossings

Ontario accounts for nearly two-thirds of truck border crossings between the two counties, Quebec 12.6% and British Columbia 10.8%, as noted by Exhibit 5.2.

[13] Source: Transport Canada, Transportation in Canada 2006.

Exhibit 5.2: Number of trucks entering Canada from the U.S. (2007)

Province of entry	Number of trucks	Percent of national total
New Brunswick	235,642	3.7
Quebec*	743,280	11.8
Ontario	4,056,420	64.5
Manitoba	291,889	4.6
Saskatchewan	114,011	1.8
Alberta	151,008	2.4
British Columbia	684,173	10.9
Yukon	9,006	0.1
Total	6,285,419	100.0

Note: A significant portion of Quebec's truck traffic to and from the United States travels through Ontario border crossing points.
Source: Statistics Canada, International Travel section, CANSIM, Table 427-0002

On a national basis, 69.5% of these trucks are Canadian based while 30.5% are U.S. based. This split has been stable for some years[14]. Exhibit 5.3 shows the split between Canadian and U.S. based trucks by province.

Exhibit 5.3 Split between Canadian based and U.S. based trucks entering Canada by province (2007)

Province of entry	Percent Canadian based
New Brunswick	73.6
Quebec*	79.2
Ontario	67.5
Manitoba	71.8
Saskatchewan	68.5
Alberta	71.3
British Columbia	68.4
Yukon	31.5
National Average	69.5

Note: A significant portion of Quebec's truck traffic to and from the United States travels through Ontario border crossing points.
Source: Statistics Canada, International Travel section, CANSIM, Table 427-0002

Ontario and Quebec accounted for 76.3% of all U.S. based trucks entering Canada in 2007 and hence account of the majority of both Canadian and U.S based trucks moving across the border. The top four border crossing locations are located in Ontario and account for 58% of total crossings indicating the dominance of southern Ontario in cross-border truck movements[15]. Many of the truck trips between Quebec and the United States move through these Ontario crossings.

[14] Since 2000 the split has varied from 69.9% Canadian in 2002 to 70.9% in 2005. Anecdotal evidence suggests that with the recent rise in the value of the Canadian dollar, the share of U.S. based carriers may be increasing.
[15] These locations are Windsor-Ambassador Bridge, Sarnia, Fort Erie and Queenston-Niagara falls.

5.3 Travel by U.S. based trucks

The MTO commercial vehicle survey data indicates that on a vehicle kilometres of travel (VKT) basis, Canadian fleets account for 83% of international trips. This is higher than their 70% share by trip count, indicating Canadian based fleets are travelling longer distances than U.S. fleets entering Canada.

5.4 Statistics Canada Trade Data

The Statistics Canada 2006 International Trade Database was used to show total value of goods exported and imported by truck. There are some notes of caution regarding this information. The mode used is the mode at the time of clearance, which may not be the same mode by which the shipment arrived in Canada. As well, the data is collected by Port of Clearance and not the province of destination. Port of Clearance is used as a proxy for final destination.

The value of goods moved between the two countries by truck in 2006 is estimated to be $347 billion, with exports valued at $182 billion and imports valued at $165 billion. Totals by Province are shown by Exhibit 5.4.

Exhibit 5.4: Value of Goods Imported and exported from/to United States by Truck ($ millions) (2006)

Province	Exports ($ millions) by province of cargo origin	Imports ($ millions) by province of arrival
Newfoundland Labrador	$333	$10
Prince Edward Island	$527	$4
Nova Scotia	$2,048	$68
New Brunswick	$2,174	$1,626
Quebec	$35,554	$10,018
Ontario	$117,452	$121,178
Manitoba	$5,168	$8,940
Saskatchewan	$1,631	$4,997
Alberta	$7,368	$6,114
British Columbia	$9,311	$11,207
Total	$181,566	$164,162

Source: Statistics Canada International Trade Database

The flowing maps illustrate the value of goods exported and imported by truck by U.S state for four regions of Canada: Atlantic Canada, Ontario and Quebec, the Prairies and British Columbia.

For the Atlantic Provinces, the states of highest value for exports are the Northeastern states, the southeast states, Texas and California. On the import side, many of the products moved by Atlantic based carriers are transported into

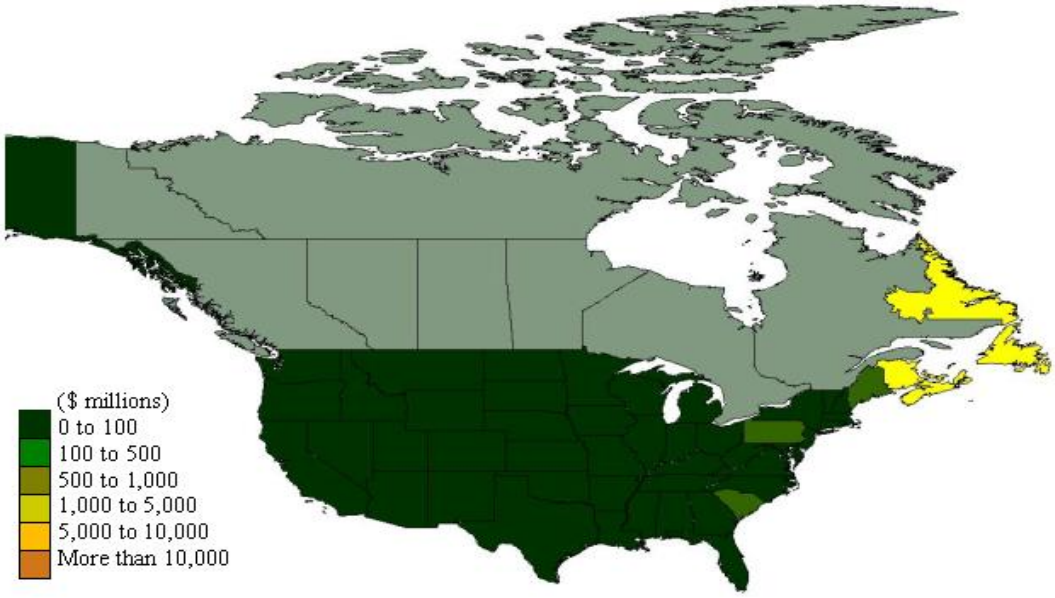
Ontario where the carrier obtains freight destined for the Atlantic Provinces completing a triangular movement that allows the fleet to attain a high load factor.

For Ontario and Quebec, the data show that the neighbouring states account for a high portion of exports and imports. The more distant states of Texas and California are also higher value states.

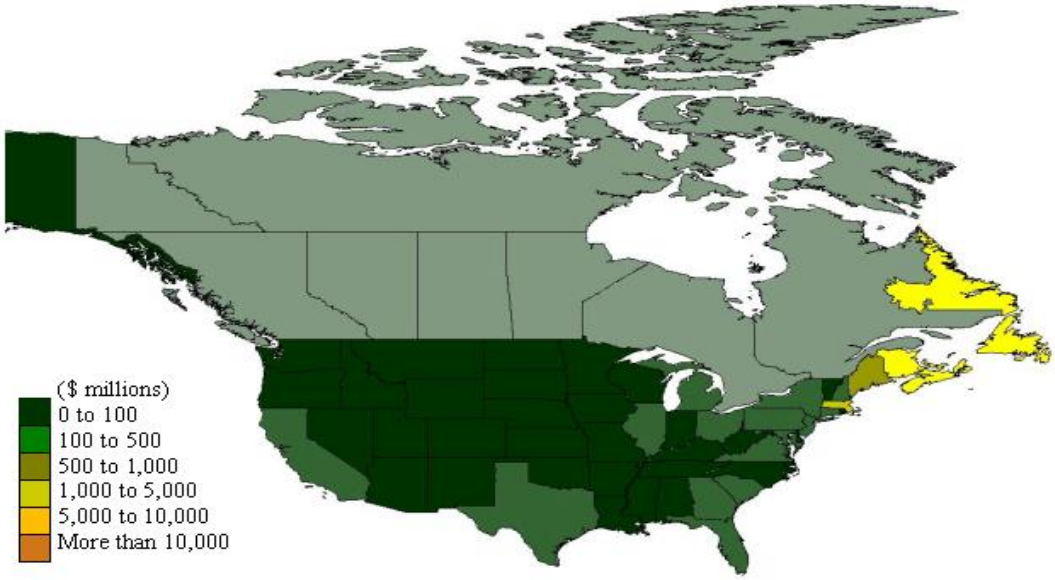
For the Prairies, the higher value states tend to be the northeast states as well as Texas and California. For British Columbia, the highest value states are the western coastal states of Washington, Oregon and California.

Overall, the data indicate that for all regions hauling to the more distant states such as Texas and California is significant. Most trucks faced with moving this freight experience the full variation in truck speed limits that exist across North America.

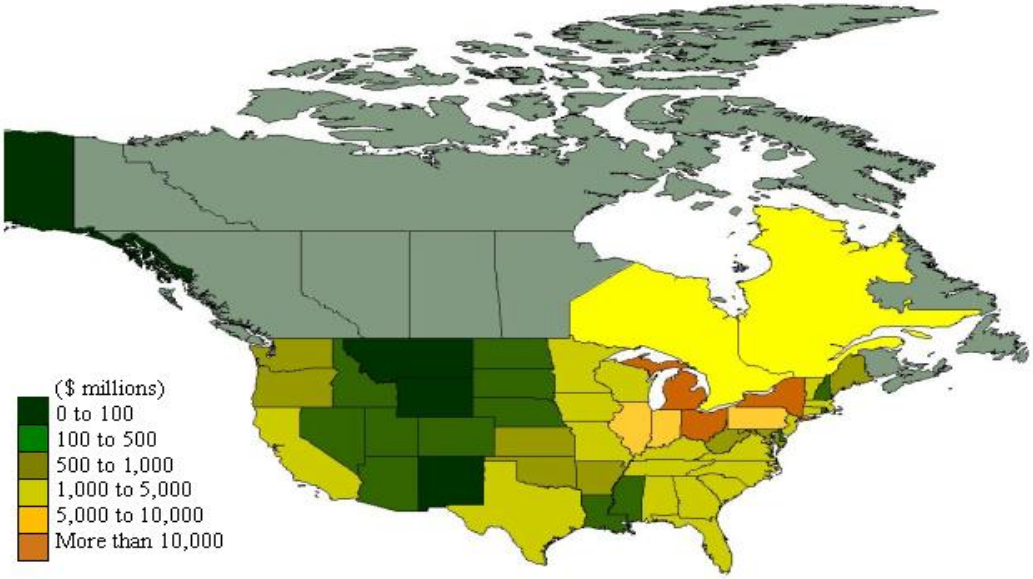
Imports from various States to the Atlantic provinces (2006)



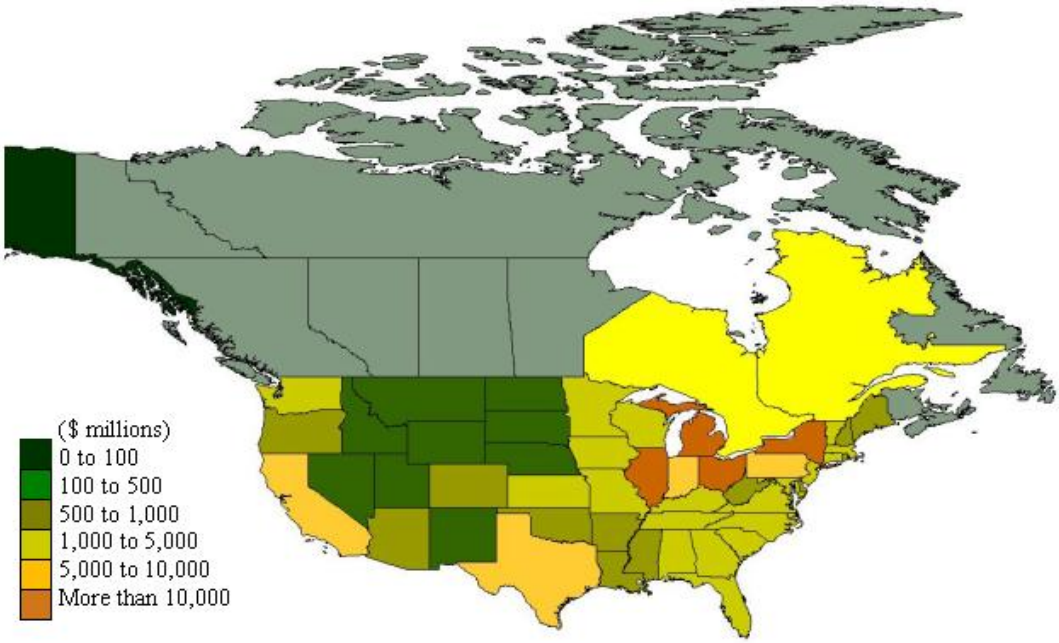
Exports to various States from the Atlantic provinces (2006)



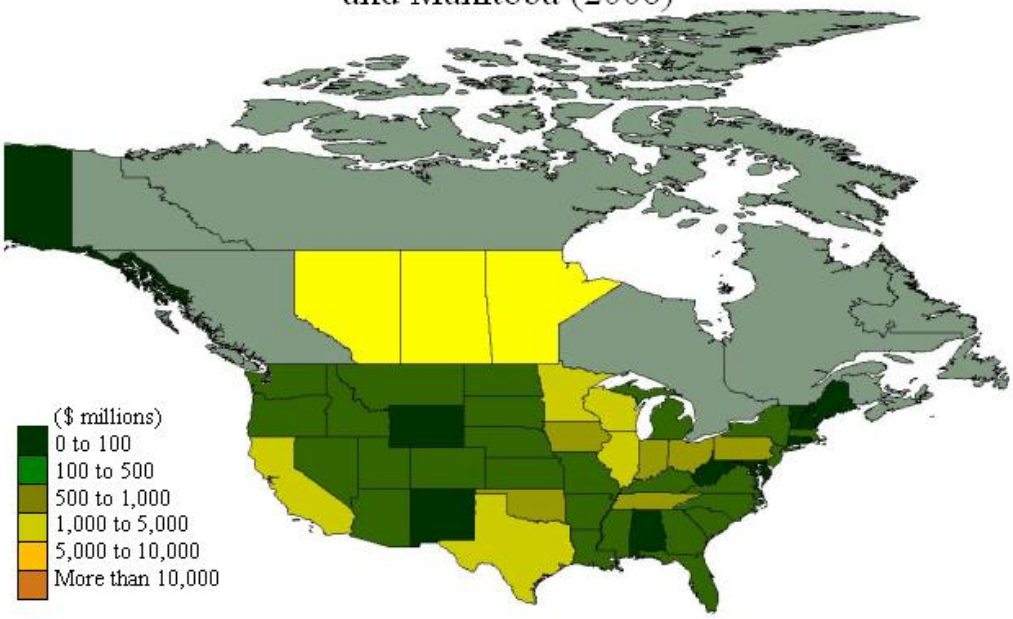
Imports from various States to Ontario and Quebec (2006)



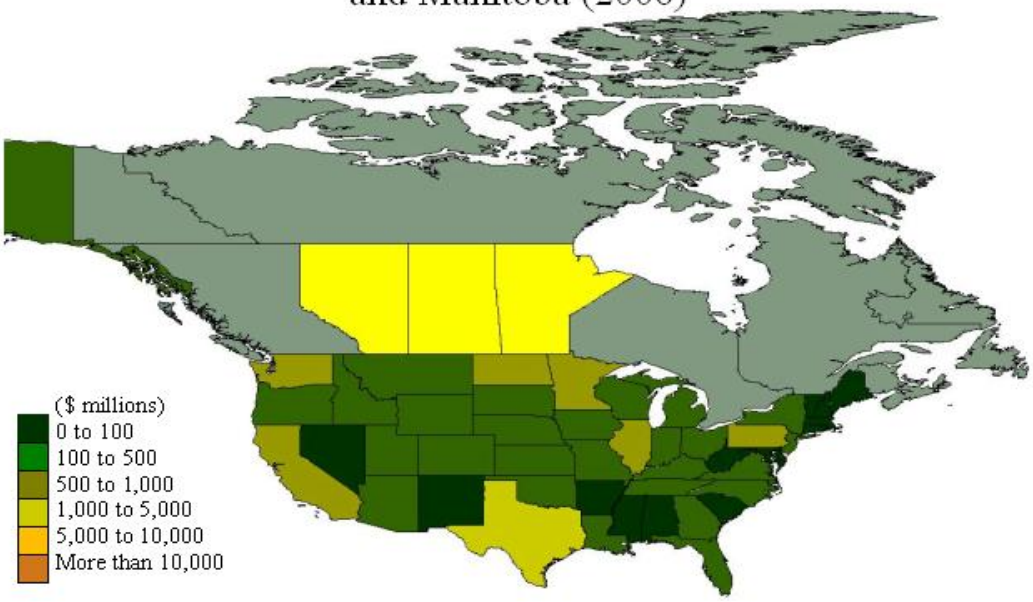
Exports to various States from Ontario and Quebec (2006)



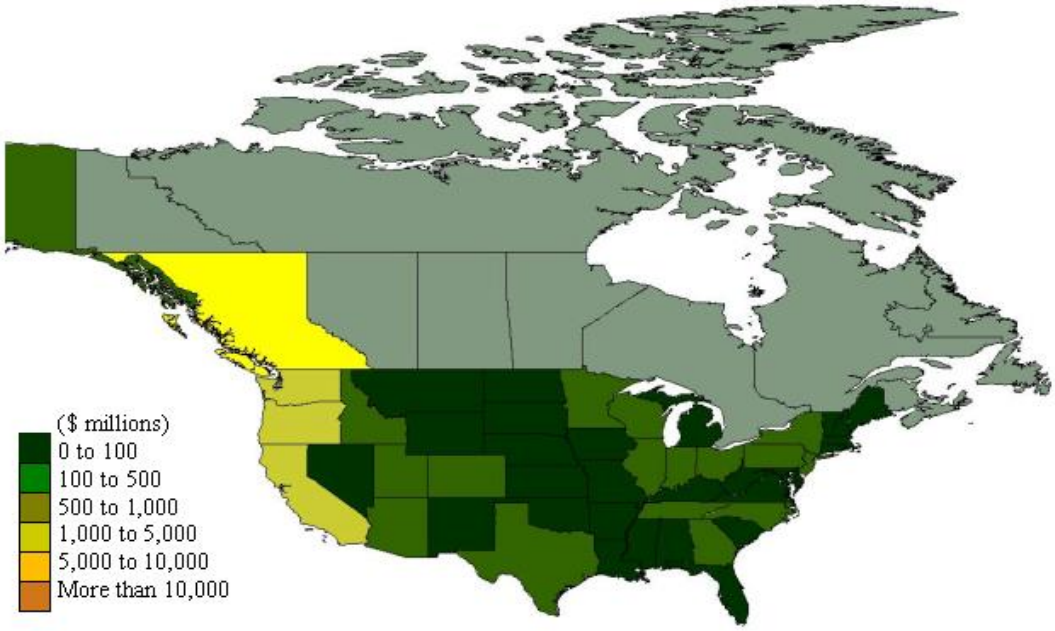
Imports from various States to Alberta, Saskatchewan, and Manitoba (2006)



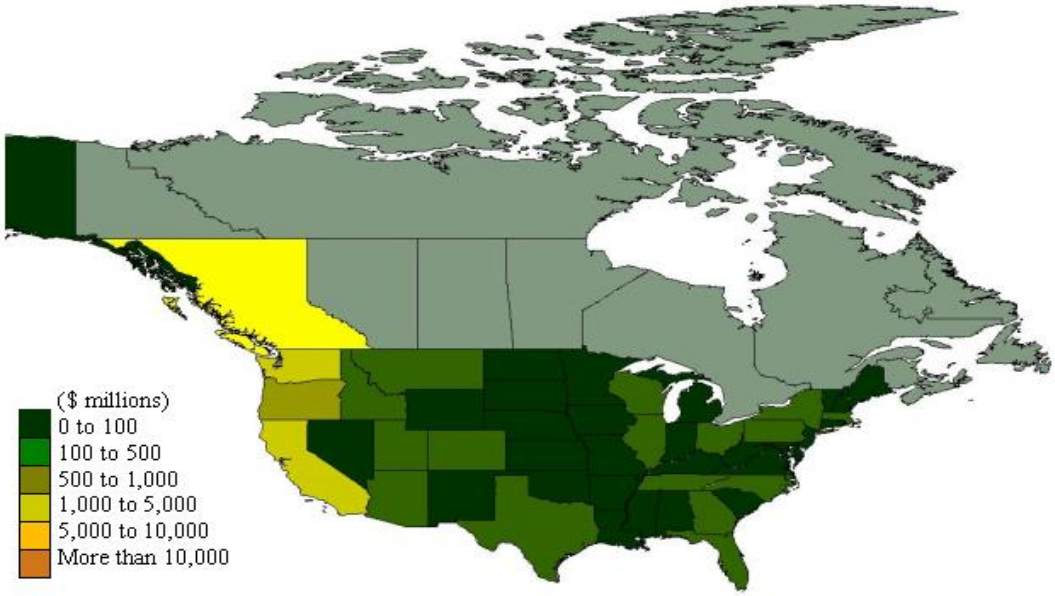
Exports to various States from Alberta, Saskatchewan, and Manitoba (2006)



Imports from various States to British Columbia (2006)



Exports to various States from British Columbia (2006)



6.0 Use of Speed-limiters

6.1 Introduction

Speed governors have been used by North American trucking fleets for several decades. Early speed governors were mechanical in nature and controlled maximum speed by controlling the rate of fuel delivery. However, the advent of the electronic engine in the late 1980's and through the 1990's has allowed maximum speeds to be set using electronic control modules (ECM's).

Today most large North American trucking fleets have all, or nearly all, of their vehicles equipped with activated speed-limiters. The speed setting varies by fleet, with most fleets using speeds in the range of 100 kph to 112 kph with an average speed setting of 105 kph. Three recent U.S. based surveys plus a survey of Canadian fleets provide the following current information on the use of speed-limiters. While sample sizes for the surveys are limited, the surveys are current and represent the best information available on the use of sped limiters in North America.

6.2 ATRI Survey

In the United States, the American Transportation Trucking Institute (ATRI) has recently completed a survey of trucking fleets regarding their use of speed-limiters[16]. A total of 240 fleets participated in the survey, ranging in size from one truck to fleets of several thousand vehicles.

Survey results show 71% of respondents using speed-limiters on at least some of their fleet vehicles. No significant statistical relationships were seen between industry segments and the use or non-use of speed governors. Of carriers that utilize owner-operators, 24.5% require these drivers to utilize speed governors.

A statistically significant relationship was present between fleet size and speed-limiter use, with the larger carriers more likely to use speed-limiters. Only 26% of carriers with 6 or fewer trucks used speed governors, compared to 62% of carriers that operated between 7 and 20 trucks and 79% who operated more than 20 trucks.

The mean fleet speed setting was 69 mph (111.1 kph) with settings ranging from 60 to 90 mph (96.6 kph to 145 kph). On a per truck basis, the average speed was 64.8 mph (104.3 kph) reflecting the fact that larger fleets tend to set lower speed limits than smaller carriers.

[16] Survey of Motor Carriers on Issues Surrounding the Use of Speed Limiting devices on Large Commercial Vehicles. American Trucking Research Institute, 2200 Mill Road, Alexandria, VA 22314. 2007.

The majority of carriers (57.1%) base their speed settings on the highest posted highway speeds in effect in their areas of operation. The qualitative responses indicate that many carriers also believe the posted speed limit is the safe speed at which to operate.

Respondents who did not use speed governors were asked the reason for not using the technology. Safety concerns were most commonly cited with 53% of respondents reporting the belief that safety was compromised through the use of governors as a result of the car-truck speed differential created and the impact this differential has for increased traffic interaction.

6.2 OOIDA Foundation Survey

The OOIDA Foundation has also recently completed a survey on the use of speed-limiters[17]. The survey covers company employed drivers rather than fleet managers or owner-operators. A total of just over 3,400 completed surveys were received. Nearly two-thirds (64.6%) indicated their vehicle was speed-limited. The average setting was 69 mph (111 km/h).

Drivers were asked to rate their concerns regarding use of speed-limiters. The primary concern was the lack of passing speed followed by increased congestion Other top concerns were more frequent passing by automobiles, being rear-ended and needing to drive longer to get miles (most drivers are paid by the mile or by the load). Drivers indicated that uniform speed limits and increased enforcement as the top two choices for controlling speed.

6.3 TRB Survey

Transportation Research Board Synthesis Commercial Truck & Bus safety Synthesis Program Project Number MC-17 also conducted a survey of speed-limiter use in the United States, with just slightly over 100 responses. The majority of responses (82.5%) indicated their organization used speed-limiters, while 17.5% did not. Safety and cost savings were the primary reasons for using speed-limiters, while the main reason for not using speed-limiters was car-truck speed differentials followed by the inability to accelerate.

Fleet average speed setting was very similar to, but slightly lower than, the ATRI survey results (TRB 67.2 mph vs. ATRI 69 mph). This is likely due to the higher portion larger fleets in the TRB survey.

[17] Speed-limiter Survey Results Final Report. OOIDA Foundation. August 2007.

6.4 Project Survey

The study team conducted interviews with fleet managers and owner-operators as part of the study. The results are very much in keeping with the survey results noted above. In total, 55 interviews were conducted. These include 15 interviews with owner-operators and 40 fleet interviews. A number of the smaller fleets use only owner-operators. Both U.S. based and Canadian based owner-operators were interviewed, as well as for-hire and private fleets. Fleet size varied from 6 to well over 1,000 power units while type of fleet included general freight haulers, couriers, petroleum haulers, flat decks, and cattle haulers.

All of the larger fleets (20 plus vehicles) interviewed were actively speed limiting their vehicles within a range of 100 to 112 kph with a fleet average setting of 104.7 kph. Most settings were between 102 and 105 kph with the highest settings lower than those noted by the U.S. surveys. Fleets did not typically require the owner-operators hauling for them to be speed-limited.

Safety and cost control were the main reasons noted by these fleets for using speed-limiters. Three of the companies interviewed (two Canadian based, one U.S. based) were in the process of reducing their maximum setting (from 110 to 105 kph and from 65 to 62 mph respectively) mainly to further improve fuel economy. Driver reaction to the lower speeds was a definite concern for these fleets with one adjusting drivers' pay packages to compensate for the lower speed.

Similar to the other surveys, larger fleets were more likely to be setting lower speeds than smaller fleets. The smaller companies indicated they implemented the higher limits so drivers would have the flexibility to deal with traffic situations. For example, several smaller Western Canada based fleets interviewed had policies of 102 to 105 kph on "cruise control" but 108 to 112 kph "on the pedal". They noted this is primarily to allow for quicker passing of slower moving vehicles on two-lane highways. In this regard, Alberta and Saskatchewan both have extensive networks of two-lane highways with a posted speed of 100 kph.

About half of the smaller fleets did not speed limit their vehicles, but did have speed policies of posted speed or lower. They felt that due to their smaller size, almost daily personal contact with their drivers and shorter span of control they did not need to use speed-limiters to control truck speeds in the same manner that larger fleets do. They also indicated their drivers typically have many years of safe driving experience, while larger fleets were more likely to have a higher portion of less experienced drivers. They allowed their drivers to have the flexibility to use higher speeds where they felt circumstances warranted such increased speed for brief periods of time.

While the larger fleets were strongly supportive of mandated speed-limiters, about half of the smaller fleets and most owner-operators expressed concern that

policy would not improve safety, due mainly to the increased car-truck interaction that would result. Again, this is similar to the U.S survey response. While these fleets do not speed limit their vehicles they typically noted their trucks were spec'd for 102 to 105 kph where they achieve the best fuel economy. Due to the financial pressures of higher fuel and maintenance costs at higher speeds, they simply could not afford to operate their vehicles at higher speeds. They suggested increased enforcement of existing laws was the best way of dealing with speeding trucks. This is similar to the responses obtained by the U.S surveys.

Fifteen sole owner-operators were also interviewed, of whom about half were U.S. based and operated into Canada. Also, many of the smaller fleets interviewed were also owner-operators or exclusively use owner-operators. They were aware of the fuel economy implications of higher truck speeds, noting that it directly affects their take home pay. While some chose to drive the posted speed, even when it was at 110 or higher, the majority indicated they could not afford to drive consistently at speeds higher than 102 to 105 kph. Two-thirds noted using a cruise speed that ranged between 100 kph and 106 kph, but did not have an upper limit setting so they would be retain the ability to move with the speed of traffic when they felt this prudent and to quickly pass slow moving vehicles. Owner-operators were not supportive of the speed-limiter policy due mainly to safety concerns associated with the increased car-truck interaction that would result. They also felt that in some situations, the policy would adversely affect their productivity. This is discussed in more detail later in this report.

While not necessarily a competitive concern several of those interviewed questioned whether or not the policy could be effectively enforced. It was their opinion that the government agencies would not have the resources available to effectively enforce such a policy. If this were the case, then U.S. vehicles coming into Quebec and Ontario, or vehicles coming in from the other provinces would likely not set their limiters.

7.0 Speed-limiters and productivity

As vehicle speeds increase, the greater distance the truck can travel in a given time frame. This means that fixed vehicle costs such as ownership costs, licences, insurance and driver costs (if paid by the trip or km) can be charged over longer distances, lowering their unit (per kilometre or mile) cost. At the same time, some costs, such as fuel, increase with increased speed.

A costing analysis was performed to indicate the trade-off between the productivity benefits and increased costs. For this analysis, 65 mph has been used as the base speed and costs compared with trucks operating at 70 mph and 75 mph. For the analysis, a theoretical maximum productivity has been used when calculating costs. The detailed costing analysis is presented as Appendix A.

The analysis assumes that the vehicle travels at the selected speed under U.S Hours of Service regulations. Fifteen minute rest breaks have been assumed every two hours, with a one hour lunch break during each shift. Only increased fuel costs are considered, even though there are other increased costs such as tire wear, engine wear, etc. However, fuel is the major increased cost. The base fuel economy used for the analysis is 7.2 miles per gallon at 65 mph with fuel consumption increasing by 4% at 70 mph and 22% at 75 mph.[18] Speeds selected represent the highest legal truck speeds in North America.

Overall the analysis shows driving at 65 mph provides the lowest overall cost as the fuel savings of the lower speed outweigh the increased productivity benefits of the higher speeds. There is an overall cost savings of 2% when operating at 65 mph compared to operating at 70 mph and 9.5% compared to operating at 75 mph. As noted, this is based on a maximum theoretical productivity. In actual driving conditions, this level of productivity would not likely to be achieved due to operating in and around areas with slower traffic speeds as well as loading and unloading wait times.

While the company owning the vehicle has this overall cost saving with the slower speed, the transport driver increases income by driving at the higher speeds. For the example analyzed, the drivers pay would be 6.5% higher at 70 mph. So while the transport fleet owner benefits from the lower speed, the driver benefits from the higher speed. From strictly an income point of view, drivers would have a preference for higher speeds. Owner-operators experience higher gross annual revenues by driving at the higher speed, but a lower net income after increased expenses.

[18] Based on data published by Natural Resource Canada FleetSmart Program.

8.0 Competitiveness Issues

This Chapter examines competitiveness issues associated with mandated speed-limiters. First, the implications on Ontario-Quebec mandating speed-limiters on the Atlantic Provinces and Western Canada and Ontario/Quebec-U.S traffic are examined. This is followed by an examination of implications for Canada/U.S traffic if Canada were to adopt the 105 kph mandated speed limit nationally.

Under the proposal, vehicle owners would continue to have the same ability to set and change their speed-limiter setting as presently exists. This allows vehicle owners whether fleet owners or owner-operators, under certain conditions, the ability to change speed settings prior to entering, or after leaving, a jurisdiction with mandated speed-limiter settings provided they have the tools to do so (refer to Chapter 12 for more detail).

8.1 Scenario 1: Ontario and Quebec only mandate speed-limiters at 105 kph

8.1.1 Interprovincial truck traffic affected

The Statistics Canada Truck Commodity Origin Destination Survey provides the best available data on freight moving within and between provinces in Canada. Exhibit 8.1 illustrates the 2006 survey results for truck traffic revenues within and between the specified regions.

The data indicate a relatively high level of interaction between Atlantic Canada and Quebec/Ontario. However, on a percentage basis there is relatively little interaction between Western Canada and Eastern Canada. Very little truck traffic moves between Atlantic Canada and Western Canada.

Trucking industry revenues within Western Canada are nearly as large as that of Quebec and Ontario combined.

Exhibit 8.1 For-hire Trucking Industry Revenues $ Millions (2005)

	Destination				
Origin	**Atlantic**	**Quebec**	**Ontario**	**West**	**Total**
Atlantic	572.5	106	149.9	44.1	872.5
Quebec	217.7	2,069.1	901.3	284.7	3,472.8
Ontario	379.1	866.1	4,259.4	1,183.8	6,688.4
West	53.6	143.8	414.8	6,551.6	7,163.8
Total	1,222.9	3,185	5,725.4	8,064.2	18,197.5

Source: Statistics Canada trucking commodity origin destination survey

These data indicate that Ontario and Quebec mandating speed-limiters at 105 kph will affect a much higher portion of Atlantic Canada's trucking industry than Western Canada's. This is examined in more detail below.

8.1.2 Implications for Atlantic Canada

The Statistics Canada Truck Commodity Origin Destination Survey was used to identify the revenue earned on freight movements by truck movements both within Atlantic Canada, between Atlantic Canada and the rest of Canada as well as between Atlantic Canada and the U.S. Results are shown by Exhibit 8.2.

Exhibit 8.2: Revenues Earned by the Atlantic Region trucking industry by movement

Movement	Revenues earned ($ millions)	Percent of total region's revenues
Within Atlantic Canada	$573	43%
Atlantic Canada to/from rest of Canada	$310	23%
Atlantic Canada to/from United States	$462	34%
Total	$1,345	100%

Source: Statistics Canada trucking commodity origin destination survey

In total, the Atlantic Provinces account for $1,345 million of truck traffic revenues. If only Ontario and Quebec were to adopt the speed-limiter policy, then this portion of the Atlantic province's freight would be directly impacted.

However, due to the makeup of the trucking industry in Atlantic Canada most of the longer distance trucking companies in the region would fall under the policy. Several of the fleets that haul into the region are either Quebec or Ontario based which means all their trucks would need to be speed-limited. As well, nearly all of the larger companies that are based in the Region operate into the United States, moving through Ontario and Quebec on the return portion of their trip, completing a triangular movement that allows them to maintain high load factors. As a result, nearly all longer distance fleets operating in the region would fall under the policy if Ontario and Quebec were to mandate speed-limiters as proposed.

The Atlantic Region based fleets interviewed as part of this project did not express any competitive concerns if Ontario and Quebec were to adopt a policy of mandated speed-limiters set at 105 kph. The companies interviewed were already operating at or lower than this speed in all of their operations. They did not feel there would be any impact on their operations and were quite supportive of the proposal. For them, the policy did not create any competitiveness issues.

Owner-operators based in the Atlantic Region would need to speed limit at 105 kph as much of the freight they haul involves Ontario and Quebec. This would then affect their ability to travel at higher posted speeds within the provinces and states that allow higher speeds. They expressed safety concerns about the increased car-truck interaction that would result from travelling at slower speeds in states with higher speed limits, especially those states with 75 mph limits. Running at the lower speed could adversely affect their productivity on certain runs where delivery schedules and hours of service restrictions, in the right circumstances, could cost them a day's worth of driving time.

These impacts would be, for the most part, mitigated if the owner-operator were to purchase and use the tools required to change the speed-limiter setting when travelling within jurisdictions other than Ontario and Quebec. It is difficult to accurately estimate the number of owner-operators who actually would use this option. This would depend upon their ability to purchase the equipment, level of comfort with using the equipment, and the amount of time spent in speed-limited jurisdictions versus non-speed-limited jurisdictions. However, given the negative opinion of speed-limiters expressed by owner-operators it is our opinion that many would do so, especially those that travel extensively in the higher posted speed jurisdictions.

Movements that are solely within the Atlantic Provinces have typically much shorter haul distances than elsewhere in Canada. Trucks can legally operate at 110 kph over some New Brunswick and Nova Scotia roads. The longest haul distance for which this would be possible is from the N.B./Quebec border to Halifax, a distance of about 700 km. Travelling speed-limited at 105 kph compared to travelling at the posted speed limit of 110 kph would mean an extra 30 minutes of driving time per trip, assuming no slowdowns due to traffic or weather conditions. However, a typical trip length on these highways would be in the order of 200 to 400 km, where the maximum time difference would be about 5 to 10 minutes. There should be very few trips where these small time differences would be meaningful. As a result the implementation of the proposed policy in the Atlantic region is not seen as placing industry sectors at a competitive disadvantage on freight movements within the region.

The Statistics Canada 2006 Trucking in Canada Report indicates there are 190 fleets in Atlantic Canada with annual revenues above $1 million. These fleets operate 5,680 power units. The majority of these units would be affected by Ontario and Quebec adopting mandated speed-limiters. The 2005 Canadian Vehicle Survey indicates there are 17,887 heavy trucks (GVW greater that 15 tonnes) registered in Atlantic Canada. On this basis, it is roughly estimated that about 32% of heavy trucks in Atlantic Canada (5,680 out of 17,887) would fall under the requirement to be speed-limited if Ontario and Quebec mandated speed-limiters.

As noted earlier, the majority of these trucks are already operating at or below the proposed limit of 105 kph. As a result their operations are not impacted in any way. On the other hand, owner operators that were interviewed indicated they would be adversely affected as they believed their safety was being adversely impacted and, in certain conditions, their productivity as well, if they did not change speed-limiter settings as they travel from jurisdiction to jurisdiction. They indicated this concern could lead them to avoid Quebec and Ontario. However, due to the importance of Quebec and Ontario to the Atlantic Region truck traffic such a decision would greatly limit their employment opportunities.

8.1.3 Implications for Western Canada

Unlike Atlantic Canada, very little of Western Canada's trucking industry interacts with Ontario and Quebec. Western Canada's trucking industry accounts for $9.4 billion in revenues, of which just $559 million, or 5.9%, involves Eastern Canada as indicated by Exhibit 8.3.

Of this $559 million, just over 70% either originates in or is destined for Manitoba. This means that the majority of carrier operations in Western Canada would be unaffected if Ontario and Quebec were to adopt the speed-limiter policy.

Exhibit 8.3: Revenues Earned by the Prairie Region trucking industry by movement

Movement	Revenues earned ($ millions)	Percent of total region's revenues
Western Canada to/from Eastern Canada	$559	5.9%
Within Western Canada	$6,552	69.5%
Western Canada to/from the United States	$2,323	24.6%
Total	$9,434	100.0%

Source: Statistics Canada trucking commodity origin destination survey

The provinces of Alberta and Saskatchewan have a fairly extensive network of highways with a posted speed of 110 kph, and Manitoba has recently approved extending this network as far east as Winnipeg and from Winnipeg south to the U.S. border. Many of the neighbouring states have posted speed limits of 70 mph or 75 mph. Our fleet interviews show speed policies tend to be higher in the West than in Eastern Canada, perhaps due to these higher speed limits. A much higher portion of fleets (typically smaller fleets) in the West would need to adjust their speeds downwards, especially their "on the pedal" speed settings.

Available speed data for B.C. indicates that, for the most part, truck speeds in the province are already below the proposed 105 kph limit due to the constrained

highway design speeds in the mountainous terrain[19]. One exception would be the Trans-Canada highway in the lower mainland area. With this exception, implementing the proposed policy in B.C. would have little effect on truck speeds for travel within the province.

The Statistics Canada 2006 Trucking in Canada report indicates 1,358 fleets in Western Canada with annual revenues of $1 million or more. These fleets operate 28,686 power units, or 22% of the 129,000 registered heavy vehicles noted by the 2005 Canadian Vehicle Survey. Our interviews indicate many of these do not operate into Ontario or Quebec. It is our opinion that half of these units, or less than 10% of the total number of heavy vehicles in Western Canada would fall under the requirement to speed limit to meet the Ontario/Quebec mandated speed. Most of these vehicles are part of larger fleets that already meet this requirement.

Western Canada based owner-operators interviewed indicated that if Ontario and Quebec implemented the policy they would not operate there, as the slower speed they would have to operate at throughout Western Canada and the United States, where they do much of their travel, would put them at a higher safety risk due to increased car-truck interaction due to the slower truck speed, if they did not reset their speed-limiter setting. Concern was also expressed about their ability to safely drive the 2-laned hilly Trans-Canada Highway in Northern Ontario and on the two-laned highways in Alberta and B.C.

They also noted that on some longer runs, they could also have their productivity adversely affected as they would need to have a rest stop before being able to complete the delivery. They noted that in some situations under Hours of Service regulations this could actually cost them a day's work.

The owner-operators noted that due to these concerns they would avoid operating in Ontario and Quebec. This could be mitigated to the extent by which these operators invest in and use the tools that would allow the limiter setting to be changed as they enter and leave speed-limited jurisdictions. It was not possible to estimate the number of owner-operators who would not operate in Ontario and Quebec as a result of a mandated speed-limiter setting in those provinces, nor the overall portion of truck traffic they carry.

8.1.4 Implications for Ontario-Quebec/ U.S. Traffic

Canadian based companies hauling into the U.S. do not compete with U.S. based fleets on hauls within the U.S. They are not allowed to pick up and deliver freight in the U.S. This means the mandated speed-limiters do not create any

[19] Environmental Benefits of Speed-limiters for Trucks Operating in Canada. Ray Barton Associates Ltd. November 2007

competitive issues between U.S. carriers and Canadian carriers when operating in the U.S.

Those U.S. based fleets that come into Quebec and Ontario would need to use these trucks at the mandated speed of 105 kph in their U.S. operations, unless they were choose to reset their speed-limiter when operating outside of Quebec and Ontario. However, this is an option most fleets would not use as this would place the speed control in the hands of the driver which negates their main reason for using the speed-limiter technology.

Concern has been expressed that speed differences created by setting truck speeds at 65 mph could cause competitive issues for these fleets vis-à-vis other U.S. based fleets that do not operate into Canada. These other fleets would be able to operate at higher speeds in the U.S. and perhaps gain a competitive advantage by doing so. This in turn could keep U.S. based fleets out of Canada as they would not want to lose this competitive edge in their U.S. operations which are potentially much larger than their Canada/U.S. operations.

Larger U.S based fleets interviewed were not concerned with this possible speed differential. Most of them are already operating at or below this speed. For example, the ATRI survey noted about 60% of these trucks are speed-limited at 65 mph or less, with another 36% between 66 and 70 mph. These speed differences did not create any problems with the larger carriers interviewed. As well, ATA did not note this as a concern when they were interviewed. All companies interviewed had the same speed limit policy across all of their operations and do not adjust speed-limiter settings by region or jurisdiction. They are not likely to create a separate fleet of trucks specifically for Canada/U.S. border crossings solely for this reason.

Analysis of the Statistics Canada trade database indicates that 47% of Canada – U.S. truck traffic (by value) moves between Ontario and seven of the neighbouring states[20] that have maximum legal truck speeds of 65 mph or less. This means that nearly half of this traffic is unaffected if trucks travel at or below the legal speed limits. Overall, there appears to be minimal impact on U.S. fleets operating into Ontario and Quebec if Ontario and Quebec were to adopt speed-limiters mandate at 105 kph.

Owner-operators were very much concerned with being speed-limited at 65 mph. The primary opposition the owner-operators and small fleets expressed to mandated speed-limiters again relates to safety concerns mainly due to increased car-truck interaction when truck speed are reduced. Simply on this basis, 80% of the owner-operators we interviewed indicated they would no longer haul into Quebec or Ontario to avoid being speed-limited. This would be mitigated to some extent if they decide instead to opt to change their speed-limiter setting when operating outside of Ontario and Quebec.

[20] These states are Michigan, Wisconsin, New York, Pennsylvania, Ohio, Indiana and Illinois.

About half of the owner-operators interviewed also expressed concern that being speed-limited would adversely affect their productivity. They noted circumstances where the time saved by travelling at higher speeds, at legal speed limits, would allow them to make a delivery within their Hours of Service limits without taking a rest break. Otherwise they would need to take this rest break prior to delivery. The delivery would then be made the next day, essentially costing them a day's pay. For example, compared to 65 mph a truck travelling at 75 mph (the legal speed limit in several states) would be able to travel approximately another 100 miles a day under U.S Hours of Service regulations with allowances for lunch and rest breaks. In some situations, this could mean making the delivery that day rather than having to take a major rest break within 100 miles of the destination.

This problem would be more prevalent for those trucks that travel in the mid-west United States where many states have legal speed limits of 110 kph (70 mph) and 120 kph (75 mph), above the proposed mandated speed of 105 kph (65 mph). However, the International Trade data indicates only a small portion of U.S.-Ontario/Quebec traffic involves these states to any degree. This means this impact would be limited. Nevertheless to the extent that it occurs this would present an obstacle, primarily for owner-operators with significant operations in these higher speed states, to operating in Ontario and Quebec, again for safety and productivity reasons.

8.2 Scenario 2: Canada wide mandated speed-limiters set at 105 kph.

Under this scenario, all Canadian jurisdictions would implement mandated speed-limiters set at 105 kph. Compared to Scenario 1 (Ontario and Quebec only), trucks operating directly between Atlantic Canada and the U.S. also come under the requirement to be speed-limited as would trucks operating between Western Canada and the U.S.

8.2.1 Implications for Atlantic Canada

As noted earlier, the triangular movement operated by most Atlantic Canada based fleets, and their owner-operators, would fall under the Quebec/Ontario requirement. There would be limited incremental impact to Atlantic Canada – U.S. traffic if the policy were to be mandated nationally. The Statistics Canada trade data shows that only 1% of the total national value of U.S. imports arrives directly to Atlantic Canada from the United States and much of this is from neighbouring states that have posted speeds of 65 mph, the proposed mandated speed limit. Given the legal speed limits involved in these movements, the mandated speed of 105 kph would have little to no effect on most Atlantic Canada – U.S. traffic travelling within legal speed limits.

The major impact on the Atlantic region would be limiting speeds of all heavy trucks in the region at 105 kph. Under the Ontario/Quebec only scenario, it was estimated that approximately 32% of the Region's heavy trucks would fall under this requirement and most of these trucks already are limited at this speed or lower. Now all of these trucks would be limited to 105 kph[21]. Some of New Brunswick's and Nova Scotia main commercial highways are currently posted at 110 kph. Mandating all heavy trucks at 105 kph could adversely affect those that currently rely upon the higher legal speed limits to make timely deliveries. As noted earlier, the distances involved appear to be too short to make the 5 kph speed differential significant in most cases. The larger trucking companies operating in the region already operate at 105 kph.

8.2.2 Implications for Ontario-Quebec

The implications for Ontario and Quebec remain the same as under Scenario 1, including the impact on truck traffic between these provinces and the United States

8.2.3 Implications for Western Canada

An estimated 90% (or more) of Western Canada trucks are, for the most part, unaffected by the Ontario/Quebec mandate. However, if the mandate were extended nationally then all heavy trucks would be speed-limited at 105 kph. Both Alberta and Saskatchewan have highways with speeds of 110 kph and Manitoba is in the process of increasing the posted speed limit to 110 kph for some if its main highways.

As noted earlier, many smaller fleets and owner-operators in Western Canada do not set upper speed limits or set them near 110 kph. However, the company policy frequently calls for these vehicles to be operated in the range of 102 to 105 kph. The higher speed is allowed to provide additional speed when passing slow moving vehicles, especially on two-lane highways. In this context, both Alberta and Saskatchewan have quite extensive networks of 2-lane roads.

Many States south of the Prairies have the higher speed limits of 70 mph and 75 mph. All truck traffic moving between Canada and the U.S. would now be speed-limited at 105 kph, raising the safety and productivity concerns noted earlier by owner-operators and smaller fleets. U.S. based owner-operators noted that due to this these concerns they would be at a disadvantage to those operating entirely in the United States and therefore not speed-limited. As a result, they would stop operating into Canada. Again, this would be mitigated to the extent they are prepared to invest in and use the tools required to make changes as they enter and leave speed-limited jurisdictions.

[21] Excepting older trucks which would be exempted as they are not speed-limiter equipped.

Some of the smaller western based fleets noted they currently operate at 110kph where it is legal to do so in Western Canada and the adjoining states. Fleets and owner-operators with runs on these highways that are currently at or near the Hours of Service limitations would be the most adversely affected as lower speeds would not allow them to make their delivery before the driver required a major rest break. Fleets indicated they would adjust their schedules accordingly to accommodate the changes or adjust the client's delivery schedule where mutually agreeable. Only a few fleets interviewed indicated this as a concern and indicated the impact was "manageable". It is possible that this concern would keep some smaller fleets and owner-operators from operating into Canada so they avoid this problem. Again, this could be mitigated to the extent they are prepared to invest resources in the tools required to change the speed-limiter setting as they drive into and out of speed-limited jurisdictions.

Truck traffic operating within B.C. would, by and large, not be affected as truck speeds on most highways in that province are already below 105 kph. As well, B.C. truck traffic to and from the U.S. mostly moves through the states of Washington, Oregon and California that have maximum truck speed limits of 55 mph (80 kph) and 60 mph (96 kph). Trucks should already be operating at speeds below the 105 kph mandated speed. Nevertheless, trucks operating to/from the U.S. mid-west would be operating in the higher posted speed states for a portion of their trips, raising the safety and productivity concerns noted earlier for this group.

8.3 ATA recommended mandated speed of 68 mph (110 kph)

The ATA has recommended a mandated speed-limiter setting of 110 kph (68 mph) rather than the limit of 105 kph (65 mph) recommended by the OTA/CTA. Both of these recommended limits appear to be based on the common practices of larger fleets in each country. Adopting these limits is a reflection of what the industry, by and large, already does. Neither the CTA nor the ATA have expressed opposition to the adoption of different mandated limits for each country. This indicates they believe that having a different mandated limit for each country is workable.

The interviews conducted as part of this project, did not indicate any specific reasons why different limits could not be implemented over and above the safety concerns noted by owner-operators and smaller fleets.

Many of those interviewed indicated that, in the interests of harmonization, one limit should be adopted by both countries. Harmonization would mean only one upper speed setting to work with throughout North America, allowing this setting to be "hard wired" and therefore more tamper resistant, thereby increasing compliance.

9.0 Driver Recruitment and Retention

Trucking industry literature has noted the possibility that higher trucks speeds may be used as a driver recruitment and retention tool. The argument is that drivers are paid by the mile or by the load and therefore the faster they drive, the more money they make. In this context, the OOIDA survey of company drivers noted a strong preference (81.7%) for working for fleets that are not speed-limited, all other things being equal, and 60% feel their concerns regarding speed-limiters are an important part of the consideration of working for a company.

This would indicate that companies not using speed-limiters, or setting them at high speeds, could have an advantage in driver recruitment and retention. This would mean that fleets operating in speed-limited jurisdictions could lose drivers to fleets operating in jurisdictions that are not speed-limited. In turn, this could affect their ability to move freight and they would lose market share. However, the survey did not ask drivers to specifically rank the importance of speed-limiters against other employment considerations.

The owner-operators interviewed strongly reflected the results of the OOIDA survey, indicating fleets that become speed-limited would lose drivers as a result, with about half of them indicating they personally knew drivers who had changed fleets for this reason. Fleet manager views on this, as measured by the TRB survey, were quite different from those of the drivers. For the TRB survey sixty-five percent of respondents (who are fleet managers) reported drivers as being neutral to speed-limiters, with 9.7% negative or very negative.

The majority fleet managers, large and small, interviewed as part of this study indicated it was the overall pay package that the driver considers in making employment decisions including such factors as mileage rate, miles attained each month, quality of equipment and fringe benefits. It was their opinion that not being speed-limited would not be a particularly effective driver recruitment and retention tool. If it was that attractive to a driver, they would not want that driver as part of their fleet. In this context, Canada's Driving Force Phase 1 noted fleet manager's top recruitment strategies as good pay/benefits/bonus; good equipment and good shifts/hours/no weekends[22]. These were more frequently offered by the larger, speed-limited companies.

A large scale, scientifically designed survey of drivers concerning their previous employment decisions and employment expectations would be required to quantify the extent to which speed-limiters can be an effective driver recruitment and retention tool. However, the qualitative information available indicates the ability to attract drivers via this means is quite limited.

[22] Canada's Driving force Phase 1. Published by the Canadian Trucking Human Resources Council, Ottawa, Ontario.

10.0 Potential economic impact on the Canadian trucking sector

The majority of heavy trucks operating in Canada are currently speed-limited, with most currently limited at or below the proposed 105 kph. There is also some downward pressure on these limits from rising diesel costs. Three of the companies interviewed are reducing their limit for this reason.

Fleets operating with higher speed settings, or without settings, noted they typically travel at or below 105 kph to control fuel costs. For the most part, these fleets have their routes set for these speeds and would feel little economic impact. It has been estimated that 63% of truck travel on intercity highways across Canada already is travelling at 105 kph or less[23]. Another 22% travels between 105 and 110 kph for which the time savings over most runs would be minimal. Companies with a speed policy in this range indicated, for the most part, little adverse impact on their operations with reducing to105 kph. The remainder of truck travel (15%) is above legal speed limits[24].

The productivity-costing analysis performed as part of this project indicates that the increased fuel costs of travelling at speeds higher than 105 kph are greater than the productivity benefits. These fuel savings have been estimated at 228 million litres annually if speed-limiters were mandated nationwide in Canada[25]. Depending upon fuel prices paid by the fleets in their area of operations, this could represent an overall savings to the Canadian trucking in the order of $190 million to $200 million annually. At the same time these fleets are likely to come under pressure from drivers who are paid by the mile or km and hence potentially experience a pay reduction. Owner-operators operating above 105 kph would see their gross revenues decrease, but their net income should improve.

Fleets and owner-operators with runs that are currently at or near the Hours of Service limitations would be the most adversely affected as lower speeds would not allow them to make their delivery before the driver required a major rest break. Fleets indicated they would adjust their schedules accordingly to accommodate the changes or adjust the client's delivery schedule where mutually agreeable. Without actually working in detail with several fleets and doing an actual audit of all their runs, it is not possible to quantify these costs. However, only a few fleets interviewed indicated this as a concern and indicated the impact was "manageable". Given the competitive nature of trucking, it is likely any associated incremental costs would not be passed along to the shipper. Owner-operators felt that, where this occurred, it could essentially cost them a day's pay.

---

[23] Environmental Benefits of Speed-limiters. Prepared by Ray Barton Associates for Transport Canada. November 2007.
[24] A higher percentage of autos than trucks travel above the posted speed limits.
[25] Environmental Benefits of Speed-limiters. Prepared by Ray Barton Associates for Transport Canada. November 2007.

Overall, there could be some impact on trucking industry competitiveness within speed-limited jurisdictions provided sufficient numbers of operators were to avoid such jurisdictions. Such actions would, in effect, reduce competition in these jurisdictions by reducing the number of competitors. This would be mitigated to the extent that operators choose to invest in and use the tools required to changes the speed-limiter setting as they enter or leave speed-limited jurisdictions or ultimately decide to operate speed-limited.

11.0 Impact on shippers

The majority of freight being moved is already being transported by companies that are speed-limited at 105 kph or less. There is obviously no impact on shippers using these companies to move their freight. This includes their just-in-time deliveries. Companies interviewed indicated they would make any adjustments necessary so there would not be any negative impact on their clients. In this context, the ATRI survey noted that 84 percent of respondents indicated that “seldom” or “very seldom” did on-time delivery get reduced as a result of implementing speed-limiters.

The interviews conducted as part of this study indicate that mandated speed-limiters would not keep larger fleets from operating into such jurisdictions. While owner-operators indicated they would avoid such jurisdictions it is our opinion that the numbers that actually do so, out of the total availability of trucks, would not affect competitiveness as far as shippers are concerned.

Overall, this indicates there would be minimal impact on shippers located within a speed-limited jurisdiction that ships with delivery timelines that do not require truck speeds above legal limits.

12.0 Impact on engine manufacturers and truck assemblers

Under the proposal, the same procedures as at present would apply to the engine manufacturers and truck assemblers. The manufacturer supplies its truck dealerships with the necessary software package and password to set and change the speed-limiter to the desired setting. This is then passed, if requested, from the dealership to the new vehicle owner. Most large fleet owners have the ability, through their own shop facilities and service personnel, to set or change speed-limiter settings. Interviews conducted as part of this study indicated they use the same speed policy throughout their entire fleet regardless of area of operation.

The speed-limiter setting can be adjusted from within the cab with the necessary hardware/software and password. This equipment costs between $1,000-2,000

($450 for software, connectors/hardware around $650-700) and would be available to the vehicle owner. The actual process of changing the speed setting takes about 5 to 10 minutes. In some cases, access to the internet may be required. This would be available at a truck stop or through a mobile internet communication device such as a Blackberry. Having these tools allows the vehicle operator to change the speed-limiter setting upon entering or leaving a speed-limited jurisdiction if they so wish. While company drivers would not likely be supplied with these tolls by the fleet manager, owner-operators, as the vehicle's owner, would have access.

13.0 Summary and conclusions

Speed-limiters are in widespread use in by the majority of trucking fleets throughout North America. Safety and vehicle operating cost savings are primary reasons for their use. Speed settings in the U.S. range from 60 to 90 mph (96.6 kph to 145 kph) with an average per truck setting of 64.8 mph (104.3 kph). Those not using speed-limiters cite safety concerns as the prime reason for not doing so. They believe safety is compromised through their use including lack of passing speed more frequent passing by automobiles and being rear-ended. Interviews conducted during this study show nearly identical results for Canada.

The majority of freight in North America is moving in trucks speed-limited at 105 kph (65 mph) or less. For those fleets already speed-limited at or below this level, there would be no impact. Within Canada those fleets operating at 106 kph to 110 kph indicated they would be able to move to 105 kph with limited difficulty. This difficulty would come mainly on runs where the driver's Hours of Service were already near the limit and the slower speed would place them in violation. Such runs would need to be adjusted but as long as the limit was 105 kph this was noted as being manageable. Owner-operators noted such situations could cost them a day's pay and hence adversely affect their productivity. Trucks operating above 110 kph would be doing so illegally no matter where they operate within Canada. Trucking associations have noted this places speed-limited operators at a disadvantage for freight where the earlier delivery at illegal speeds gets the freight.

The main competitive concerns in adopting speed-limiters whether only Ontario and Quebec or across Canada relate to safety and productivity concerns. Owner-operators and some small fleets believe that safety would be negatively affected due to increased car-truck interaction. In some situations, the lower speeds would reduce their net income. It was not possible to quantify this reduction within the scope of this project. The majority of these operators indicated that as a result of these considerations they would choose not to operate in speed-limited jurisdictions. This would, in effect, reduce competition in such jurisdictions by reducing the number of competitors. These concerns are more

prevalent in Western Canada and the mid-west states where there is a more extensive highway network with posted speed limits of 110 kph and 120 kph.

The owner-operators interviewed were strongly of the view that speed-limited fleets would be placed at a disadvantage when recruiting drivers. This view was not shared by large fleet managers and the majority of small fleets noting it is the overall pay package that drivers consider such as mileage rates, quality of equipment and fringe benefits. It was their opinion that not being speed-limited would not be an effective driver recruitment and retention tool. Overall the qualitative information available indicates the ability to attract drivers via this means is quite limited.

In regards to the ATA proposal to speed limit trucks in the U.S. at 68 mph the interviews and analysis conducted as part of this project did not indicate any specific reasons why different limits could not be implemented. However, many of those interviewed indicated that in the interests of harmonization that one limit should be adopted by both countries. Harmonization would mean only one upper speed setting to work with throughout North America, allowing this setting to be “hard wired” and therefore more tamper resistant, thereby increasing compliance.

A costing analysis performed as part of this study show that the increased fuel and vehicle operating costs of travelling at speeds above 105 kph outweigh the increased productivity benefits. Overall, implementation of the measure would produce positive benefits to the industry. Those operators with runs that could no longer be serviced under driver Hours of Service regulations would need to adjust their operations accordingly. Fleets indicated they could do this without major implications as long as the speed was 105 kph. Speeds lower than this would be more problematic. Owner-operators noted that these situations could cause them to lose a day’s pay.

Overall, there would be minimal impact on the operation of a producer; manufacturer or retailer located within a speed-limited jurisdiction that ships with delivery timelines that do not require truck speeds above legal limits.

APPENDIX A

COMPARATIVE COSTING ANALYSIS OF 65 MPH, 70 MPH AND 75 MPH TRUCK SPEEDS

Logistics Solution Builders Inc.
Motor Carrier Fleet Analysis

G.V.W.	80,000	80,000	lbs
Payload	37,793	37,793	lbs
Annual Driven Distance	197,000	170,750	Miles
Percent Loaded Miles	75%	75%	
Annual Loaded Distance	147,750	128,063	Miles
Annual Ton-Mi	2,791,953	2,419,929	Ton-Mi

Costs by Component and In-Total

	Speed at 75 MPH Cents Per Ton-Mi	**Speed Limited to 65 MPH Cents Per Ton-Mi**	**Extra Cost Due to Speed-limiter C/Ton Mi**	
Power Costs				
Driver	4.732	4.791	**0.059**	Driver costs increased by speed-limiters
Fuel	4.353	3.401	**-0.952**	Fuel costs reduced by speed-limiters
Repairs	0.706	0.706	0.000	
Tires	0.247	0.247	0.000	
Miscellaneous	0.106	0.106	0.000	
Sub-Total Power Variable	**10.144**	**9.251**	-0.893	
Depreciation	0.573	0.661	0.088	Lower equipment productivity
Licenses	0.066	0.076	0.010	when speed is limited
Interest on Equip. Ownership	0.124	0.143	0.019	Fixed costs per unit of transport output increased
Sub-Total Power Fixed	**0.763**	**0.880**	0.117	
Sub-total Power	**10.906**	**10.131**	-0.776	

Trailer Costs				
Repairs	0.635	0.635	0.000	
Tires	0.233	0.233	0.000	
Miscellaneous	0.054	0.062	0.008	
Sub-Total Trailer Variable	**0.922**	**0.930**	0.008	
Depreciation	0.121	0.139	0.019	Lower equipment productivity
Licenses	0.000	0.000	0.000	when speed is limited
Interest on Equip. Ownership	0.034	0.039	0.005	Fixed costs per unit of transport output increased
Sub-Total Trailer Fixed	**0.155**	**0.178**	0.024	
Sub-total Trailer	**1.076**	**1.108**	0.032	
Overhead Costs				
Administration	1.916	1.797	-0.119	
Insurance	0.472	0.442	-0.029	
Profit	0.368	0.346	-0.023	
Sub-Total Overhead Costs	**2.756**	**2.585**	-0.171	
Total Trucking Costs	**14.739**	**13.824**	-0.915	**Over-all Trucking Productivity Improved by Speed-limiter**

Note over-all impacts (to a company owning a transport unit)

Fuel savings from limiters amount to 22% based on a reduction from 75 MPH to 65 MPH

This savings outweighs all other cost penalties (e.g. fixed costs productivity due to less productive miles per year)

Over-all net savings for fuel limiters are 6.21%

Logistics Solution Builders Inc.
Motor Carrier Fleet Analysis

G.V.W.	80,000	80,000	lbs
Payload	37,793	37,793	lbs
Annual Driven Distance	183,750	0	Miles
Percent Loaded Miles	75%	75%	
Annual Loaded Distance	137,813	0	Miles
Annual Ton-Mi	2,604,169	0	Ton-Mi

Costs by Component and In-Total

	Speed at 70 MPH Cents Per Ton-Mi	**Speed Limited to 65 MPH Cents Per Ton-Mi**	**Extra Cost Due to Speed-limiter C/Ton Mi**	
Power Costs				
Driver	4.760	4.791	**0.031**	Driver costs increased by speed-limiters
Fuel	3.741	3.401	**-0.340**	Fuel costs reduced by speed-limiters
Repairs	0.706	0.706	0.000	
Tires	0.247	0.247	0.000	
Miscellaneous	0.106	0.106	0.000	
Sub-Total Power Variable	**9.559**	**9.251**	-0.309	
Depreciation	0.614	0.661	0.047	Lower equipment productivity
Licenses	0.070	0.076	0.005	when speed is limited
Interest on Equip. Ownership	0.133	0.143	0.010	Fixed costs per unit of transport output increased
Sub-Total Power Fixed	**0.818**	**0.880**	0.062	

Sub-total Power	**10.377**	**10.131**	-0.246	
Trailer Costs				
Repairs	0.635	0.635	0.000	
Tires	0.233	0.233	0.000	
Miscellaneous	0.058	0.062	0.004	
Sub-Total Trailer Variable	**0.925**	**0.930**	0.004	
Depreciation	0.130	0.139	0.010	Lower equipment productivity
Licenses	0.000	0.000	0.000	when speed is limited
Interest on Equip Ownership	0.036	0.039	0.003	Fixed costs per unit of transport output increased
Sub-Total Trailer Fixed	**0.166**	**0.178**	0.013	
Sub-total Trailer	**1.091**	**1.108**	0.017	
Overhead Costs				
Administration	1.834	1.797	-0.037	
Insurance	0.451	0.442	-0.009	
Profit	0.353	0.346	-0.007	
Sub-Total Overhead Costs	**2.638**	**2.585**	-0.053	
Total Trucking Costs	**14.106**	**13.824**	-0.282	**Over-all Trucking Productivity Improved by Speed-limiter**

Note over-all impacts (to a company owning a transport unit)

Fuel savings from limiters amount to 9.9% based on a reduction from 70 MPH to 65 MPH

This savings outweighs all other cost penalties (e.g. fixed costs productivity due to less productive miles per year)

Over-all net savings for fuel limiters are 2.00%

APPENDIX B

SAFETY BENEFITS OF SPEED-LIMITERS

Safety Benefits of Speed-limiters

The safety argument for speed-limiters is that slowing heavy vehicles improves road safety by reducing collisions and mitigating the severity of collisions that do occur. In certain traffic situations, reducing truck speed can also reduce speed variability which has been shown to improve road safety. Surveys on the use of speed-limiters in North America show that fleet managers, especially managers of larger fleets, are of this view. The argument against speed-limiters is that safety can be compromised in situations where increased speed differentials between trucks and other vehicles occur, or when passing slow moving vehicles or in merging traffic situations. Owner-operators and managers of smaller fleets tend to support this viewpoint.

Mandated speed-limiter regulations have been Europe and Australia for some time. In Europe, the requirement also includes medium-sized trucks. The most definitive results on the effectiveness of speed-limiters comes from the U.K., which showed that the crash involvement rate for speed-limited heavy trucks fell 26 percent between 1993 (when mandated) to 2005[26]. U.K. authorities noted that other contributing factors may have influenced the decline but concluded that speed-limiters at least played a significant role. However, the specific role that speed-limiters played was not specifically quantified.

The Royal Society for the Prevention of Accidents (RoSPA, 2001) objected to proposed European Commission's speed-limiter regulations for lighter heavy goods movement vehicles by stating the following:

> "There is no clear evidence to show how many accidents have been prevented by fitting top-speed-limiters to [large commercial] vehicles. Although, it seems likely that this measure has helped to reduce speeds, and so helped to reduce casualties, it is unfortunate that the effectiveness of top speed-limiters on large vehicles has not been properly evaluated. This lack of evidence also makes it difficult to assess the likely road safety benefits of the EC's proposal to extend this requirement to lighter HGVs, buses and coaches and to midi-coaches and minibuses. We also note that the fitment of top speed-limiters may reduce speeds on trunks roads and motorways, but will have no effect on urban roads, or roads through rural towns and villages, which have lower speed limits, and where driving at inappropriate speed (rather than excessive) speed is the problem. The Regulatory Assessment shows that speeding by large vehicles is still a serious problem. Despite the existing requirement for top-speed-limiters on the heaviest vehicles, over 80% of HGV's and 50% of coaches and buses exceed the speed limits on dual carriageways, and on single carriageways well over 60% of HGVs and 23% of buses and coaches

[26] Transportation Research Board Synthesis Commercial Truck & Bus safety Synthesis Program Project Number MC-17

> exceed the limits. Therefore, while RoSPA would support the measures proposed, we do not believe that they will have any significant effect on casualty reduction. RoSPA believes that the ultimate aim should be to have intelligent speed-limiters fitted to all road-going vehicles, including cars, although this is clearly a long-term aim that will depend on the results of on-going research and trials."

Within North America, there have not been any quantitative assessments of the safety benefits of speed-limiters. NHTSA's 1991 Commercial Motor Vehicle Speed Control Safety Report to Congress was supportive of fleet applications of speed-monitoring and speed-limiting devices, but concluded that

> "there was not sufficient justification to consider requiring all heavy trucks to be so equipped. Problem size statistics suggested that the number of target crashes was low, e.g., approximately 30 fatal crash involvements per year for combination-unit trucks. This small crash problem size, together with uncertainties regarding the potential for crash reduction, suggested that the benefits of mandatory speed limitation were questionable."

Proponents of speed-limiters note that speed limits and truck speeds in the U.S. have both increased since then, changing the dimensions of the problem.

Most recently, the ATRI fleet survey on the use of speed-limiters found it difficult to meaningfully compare fleet safety data before and after speed-limiter installation due to the low number of respondents (56 carriers) that provided objective safety data (in terms of vehicle miles traveled per million miles for pre- and post-limiter installation). Due to the lack of data for these survey items, it was not possible for the report authors to make strong claims about safety outcomes on the use of speed-limiters. Fifty-six percent of respondents indicated speed-limiters were either "successful" or "very successful" in reducing crashes, and 64 percent reported speed-limiters were either "successful" or "very successful" in reducing speeding violations.

TRB's recent review of mandated speed-limiters noted the information supporting safety benefits is qualitative and recommends a rigorously designed before and after evaluation to objectively measure and quantify their safety benefits. This being said, there are many groups that are firmly convinced of the safety benefits of mandated speed-limiters. There are also those that believe that mandated speed-limiters for heavy trucks would not improve safety noting that increased enforcement of existing laws would be more effective in improving highway safety.