

## Collision Involvement of Older Commercial Truck Drivers

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### Abstract

In light of Canada's aging population, a fair amount of attention has been given to the safety issues surrounding elderly drivers and possible relicensing or retesting strategies. It is well documented that collision rates dramatically increase as the general population of drivers progress into their senior years. Unfortunately, little is known about the relative collision involvement of aging commercial drivers. The trucking industry is struggling to manage a chronic driver shortage problem, so the employment of older drivers will likely increase. Past research has indicated driving related skills including perception and motor skills begin to decline at approximately age 65.

Other studies have shown that elderly passenger vehicle drivers regulate their driving behaviour by avoiding certain high-risk driving situations. This is not always possible for older commercial vehicle drivers who may not be able to avoid driving at night, long distances, during rush hour and in construction zones. For this reason, combined with the increased responsibility associated with operating commercial vehicles and higher collision consequences, it may be prudent to impose more stringent licensing standards on aging commercial drivers.

This study examines the collision involvement of older commercial truck drivers. In order to achieve this, an examination of the collision involvement of elderly commercial drivers in New Brunswick was conducted. The collision involvement analyses used the New Brunswick Department of Transportation

accident database for years 1993 - 2003. Rates were developed using vehicle-kilometres estimates from the 1999 National Roadside Study to compare older commercial drivers to other age groups. Among other findings, commercial drivers over the age of 70 were found to experience collision rates 6.3 times higher than middle-aged groups. Other analyses were undertaken to gain insight into contributing factors of collisions where older commercial drivers are overrepresented.

### Résumé

Compte tenu du vieillissement de la population canadienne, une attention particulière a été accordée aux questions de sécurité relatives aux conducteurs vieillissants et aux stratégies possibles de rétablissement du permis de conduire ou de nouveaux examens de conduite. Il est bien documenté que les taux de collisions augmentent considérablement à mesure que la population de conducteurs avance en âge. Malheureusement, il existe peu de données sur les collisions impliquant des camionneurs vieillissants. L'industrie du camionnage s'efforce de gérer la pénurie chronique de conducteurs; pour cette raison, l'embauche de conducteurs plus âgés augmentera sans doute. Selon des recherches antérieures, les capacités en matière de conduite, y compris la perception et la motricité, commencent à diminuer vers l'âge de 65 ans.

D'autres études ont démontré que les conducteurs d'automobile vieillissants règlent leur comportement de conduite en évitant certaines situations de conduite présentant des risques élevés. Cela n'est pas toujours possible pour les conducteurs de véhicules commerciaux plus âgés qui ne peuvent pas toujours éviter de conduire la nuit, sur de longues distances, aux heures de pointe et dans les zones de construction. Pour cette raison, et en plus de la responsabilité accrue associée à la conduite de véhicules commerciaux et aux risques plus élevés de collisions, il peut être prudent d'imposer des normes plus strictes aux camionneurs plus âgés pour l'obtention d'un permis de conduire.

La présente étude examine les données sur les collisions impliquant des camionneurs plus âgés. À cette fin, on a examiné les données sur les collisions impliquant des camionneurs vieillissants au Nouveau-Brunswick. Les analyses de ces données ont été effectuées à partir de la base de données sur les accidents du Ministère des transports du Nouveau-Brunswick pour les années 1993 à 2003. Des taux ont été définis à l'aide des estimations véhicule-kilomètres de l'Enquête nationale sur route de 1999 pour établir une comparaison entre les camionneurs plus âgés et les autres groupes d'âge. D'autres analyses ont été entreprises afin de déterminer les facteurs contributifs aux collisions là où il y a surreprésentation de camionneurs plus âgés.

## 1. Introduction

The recent trend in road safety has been a decrease in motor vehicle collisions despite increases in vehicle registrations and vehicle kilometres driven. There is still room for improvement, however, with thousands of deaths, and even more injuries, due to motor vehicle accidents occurring every year. Road vehicle collisions accounted for 93 percent of all transportation fatalities in Canada in 2001<sup>5</sup>. Heavy commercial vehicles play a significant role in the number of fatalities and serious injuries. Transport Canada<sup>4</sup> estimates collisions involving heavy trucks account for approximately 7 percent of total collisions. When looking specifically at fatal collisions, however, the percentage of collisions involving heavy trucks jumps to over 16 percent, indicating that accidents involving heavy trucks tend to be more severe than other accidents.

Both driver condition and driver action have been identified as contributing factors in a number of collisions involving heavy commercial vehicles. Therefore, regulatory agencies should look for ways to address the safety of the drivers themselves to improve the safety of commercial truck operations. Already, there have been improvements to standards such as those for driver training and hours of work. There has also been research done in the area of the minimum age requirement to obtain a commercial vehicle license. One area that has not been explored in the commercial vehicle sense is the aging driver. Studies conducted to date on the safety of older drivers examined only drivers of passenger vehicles. Concerns raised from these studies could only be heightened due to the increased complexity of driving a heavy commercial vehicle.

The proportion of the elderly is expected to continue to rise with long term projections from Statistics Canada predicting the population 65 years and older to make up 23 percent of the total population in 2041 compared to 12 percent in 1996<sup>6</sup>. Just as the population of elderly is increasing, those driving into their later years will

also be increasing, not only for passenger vehicles, but commercial vehicles as well. The age profile of the trucking industry in comparison to the overall employed workforce shows an increase in the proportion of drivers aged 65 and older indicating an attraction to this type of work for that age group<sup>1</sup>. There are more drivers entering the profession at a later age and also driver retention strategies to help deal with significant driver shortages. Therefore, research into the safety of older commercial vehicle drivers becomes essential.

## 2. Study Objective

This study's overall goal was to develop a better understanding of the safety issues surrounding elderly commercial drivers in New Brunswick. To achieve this, an examination of the collision involvement of older commercial drivers was conducted. The New Brunswick Department of Transportation accident database (1993-2003) was combined with driver exposure estimates from the 1999 National Roadside Study. The analyses developed comparisons between the safety of older and younger commercial driver age groups.

## 3. Background

An extensive literature search was conducted in order to synthesize previous studies conducted on the safety of older drivers including collision involvement and medical concerns conducive to aging that may affect driving ability. Studies pertaining specifically to older commercial vehicle drivers were found to be limited but were explored when available.

Comparisons made by NHTSA<sup>3</sup> show collision rates per 100 million miles traveled highest among the youngest group of general drivers (15-19 years old), followed by the oldest group of drivers (over 85 years old). The rates decline from the youngest drivers until the age of 60 where the rates begin to

increase and continue to do so through the older ages, forming a U-shape plot.

The risk of debilitating diseases increase with age, as does an overall deterioration of health. The functional capabilities of elderly drivers including sensory, cognitive and physical skills required to safely operate a vehicle are of greatest concern. Diminished visual capabilities in older adults include contrast and glare sensitivity, reduced visual acuity, reduced night and peripheral vision, as well as decreased useful field of view to name a few.

A study by USDOT<sup>6</sup> stated that both long and short term memory, attention, information processing rate, decision making skills, and time and distance judgment are cognitive functions believed to be affected with aging. These reduced abilities create difficulty driving in unfamiliar or congested areas, the failure to perceive conflicting vehicles, or the failure to comply with traffic or rail crossing signals, thereby resulting in increased risk of accidents and anxiety while driving<sup>6</sup>.

Muscle strength, range of motion, grip strength, and reaction time are some of the physical functions important to driving, which are negatively affected by aging<sup>7</sup>. Arthritis is commonly associated with aging as is the incidence of other diseases requiring medication treatment which may include side effects detrimental to safe driving.

Studies specifically addressing older commercial drivers were limited in number at the time of the study, with a common theme occurring in those found stating the need for collision data stratified by age and vehicle type. The current low percentages of older commercial truck drivers among the overall population are believed to be the reason for the lack of effort to date in this area.

One study had not found older operators to be a significant safety risk and suggested that the maturity and experience of older commercial vehicle operators can compensate for loss of some driving skills and capabilities due to aging, even

though they can not as easily alter travel behaviours as can private motorists. The USDOT<sup>7</sup> study found that cognitive factors, such as failing to take appropriate action (i.e., response to a situation) and inattention, were involved in many cases when there was an accident involving an older commercial vehicle driver.

#### **4. Research Methodology**

Data from the New Brunswick Department of Transportation collision database for the years 1993 to 2003 were obtained for use in this study. The database included police reports from all reportable motor vehicle collisions during that time. The database contains numerous fields that describe the characteristics of collisions, including information regarding environmental conditions, vehicles and drivers involved, and configuration of the collisions.

Only collisions involving heavy commercial trucks were required for this study, therefore the data were sorted by the vehicle type field to identify only those collisions of interest. Rows within the data containing a vehicle ID corresponding to 'Trucks 4,500 kg and Over' (code 04), 'Truck Tractor Bobtail' (code 05) and 'Truck Tractor with Towed Unit' (code 55) were selected to form a smaller database containing only those collisions involving a heavy truck during the 11-year period. A total of 7,880 heavy vehicle collisions were described in this dataset.

Estimates of driver kilometres were needed to normalize collision data. The 1999 National Roadside Study (NRS) estimates were used for this purpose. The NRS involved a total of 238 data collection sites (DCS) spread across the 25, 200 km of highways that make up the main components of the Canadian network used by the trucking industry, referred to as the Study Highway System (SHS). Each site operated for a one-week period to collect a 7-day truck count, categorized by day, hour and type of truck and to conduct questionnaire

interviews of a random sample of trucks (totaling 65,000).

The expansion factor applied to the data was an estimate of the number of truck-trips operating during a one-week period in the summer/fall of 1999 that would have the same truck, driver, carrier, cargo and trip characteristics as described on the questionnaire. The factor was derived by taking into account the truck trip population characteristics at the DCS (as recorded by the truck count) and the probability that the truck trip described on the questionnaire was also counted at other DCSs.

The resulting product of the study was the Truck Traffic Estimate Software Package. The package produces user-queried estimates of truck traffic activity. The estimates of interest for this study were the yearly volumes of truck traffic using the highway system within New Brunswick, measured as distance travelled and tabulated by driver age. The SHS covered 972 kilometres in New Brunswick, all of which were part of the National Highway System.

Table 1 presents the estimated yearly commercial vehicle-kilometres in New Brunswick, stratified by age, for both the SHS only and all NB roads, as given by the Truck Traffic Estimate Software Package.

The data summarized in Table 1 illustrate that the estimates given for commercial truck drivers over 70 years old traveling in New Brunswick had a fair amount of uncertainty due to the small sample size. It was therefore necessary to investigate at which confidence this estimate could be used and interpreted by comparing New Brunswick estimates to those given for Canada in its entirety, which were found using an acceptable sample size.

The lengths of the Study Highway System in New Brunswick and Canada were 972 kilometres and 25,196 kilometres, respectively. These data were used to normalize the estimates of kilometres

travelled in both Canada and New Brunswick only by drivers over the age of 70. It was found that truck drivers over 70 years old traveled 9,837,358 km in Canada annually. This total included 144,350 km specifically on the New Brunswick SHS. Calculating the relative kilometres travelled per kilometre of SHS by the drivers over 70 years old resulted in an average of 148.5 for drivers in New Brunswick and 390.4 for drivers in Canada. The value of annual kilometres driven by drivers 70 years and over per kilometre of SHS in Canada was 2.63 times higher than that on the New Brunswick SHS.

This procedure was repeated for all drivers to determine whether the difference was specific to the oldest group of drivers because of the small sample size of drivers over 70 years old driving in NB or if the finding was consistent to what was found overall comparing New Brunswick to Canada. These data show the annual relative kilometres travelled on the Canadian SHS by all drivers were higher by a factor of 1.32 than that in New Brunswick. The factor found using the full sample size in both New Brunswick and Canada (1.32) was assumed to be more reliable than the factor found using only the sample of drivers over the age of 70 years old (2.63). To make use of the larger sample size for improving the estimate of kilometres driven by drivers over 70 years old in New Brunswick, the original estimated value was adjusted based on this factor. Table 2 reflects the change made to the data and shows the values that were used to calculate the subsequent collision rates in this study.

The “elderly” have traditionally been classified by researchers as those aged 65 and older. This classification could not have been used with the exposure estimates given by the NRS, which uses 61-70 and over 70 years old to define the oldest groups of drivers. Therefore, this is the classification used in this study.

**Table 1 – NB Vehicle Kilometres by Age as Given by the 1999 NRS Truck Traffic Software Package**

Age	# Observed	Estimated Km Driven on SHS Roads	Reliability	Estimated Km Driven on all NB Roads	Reliability
<20	29	1,390,023	Caution	1,451,588	Caution
21-30	749	48,560,997	Good	59,605,846	Good
31-40	1,189	88,205,681	Good	100,406,768	Good
41-50	1,040	76,395,117	Good	83,987,000	Good
51-60	599	37,682,621	Good	46,385,354	Good
61-70	95	6,249,178	Caution	8,085,090	Caution
>70	2	144,350	Poor	154,606	Poor
Refused	279	14,986,237	Good	16,230,470	Good
Terminated	565	512,938	Caution	602,796	Caution
Total	4,547	274,127,140	Good	316,909,519	Good

**Table 2 – Revised NB Vehicle Kilometres by Age**

Age of Driver	Estimated Distance on all NB Roads
<20	1,451,588
21-30	59,605,846
31-40	100,406,768
41-50	83,987,000
51-60	46,385,354
61-70	8,085,090
<b>70+</b>	<b>307,666</b>

The heavy commercial vehicle data for each of the 11 years were sorted by the driver birth year field. Based on the year the accident took place the driver age was calculated and added as a new field column in the database. A count function was then performed on the column containing driver age to obtain the total number of commercial vehicle accidents that occurred in New Brunswick in each of the 11 years by the various age groups and

normalized by the exposure estimates for the same age groups. Results of the analysis are presented in the following section.

## 5.0 Study Results

The following sections summarize the more significant findings of this study.

### 5.1 Collision Rates

The data in Table 3 show the total number of commercial vehicle collisions that occurred in New Brunswick from the year 1993 to 2003 for each age group of drivers. Combining the data of Table 3 with the NRS estimates of kilometres driven on all New Brunswick roads by the different age groups yields the collision rates given in Table 4. These data show a normalized comparison of the accident involvement of commercial vehicle drivers of various age groups using the best estimates for exposure available at the time of the study.

**Table 3 – Commercial Truck Collision Frequency by Driver Age, New Brunswick 1993-2003**

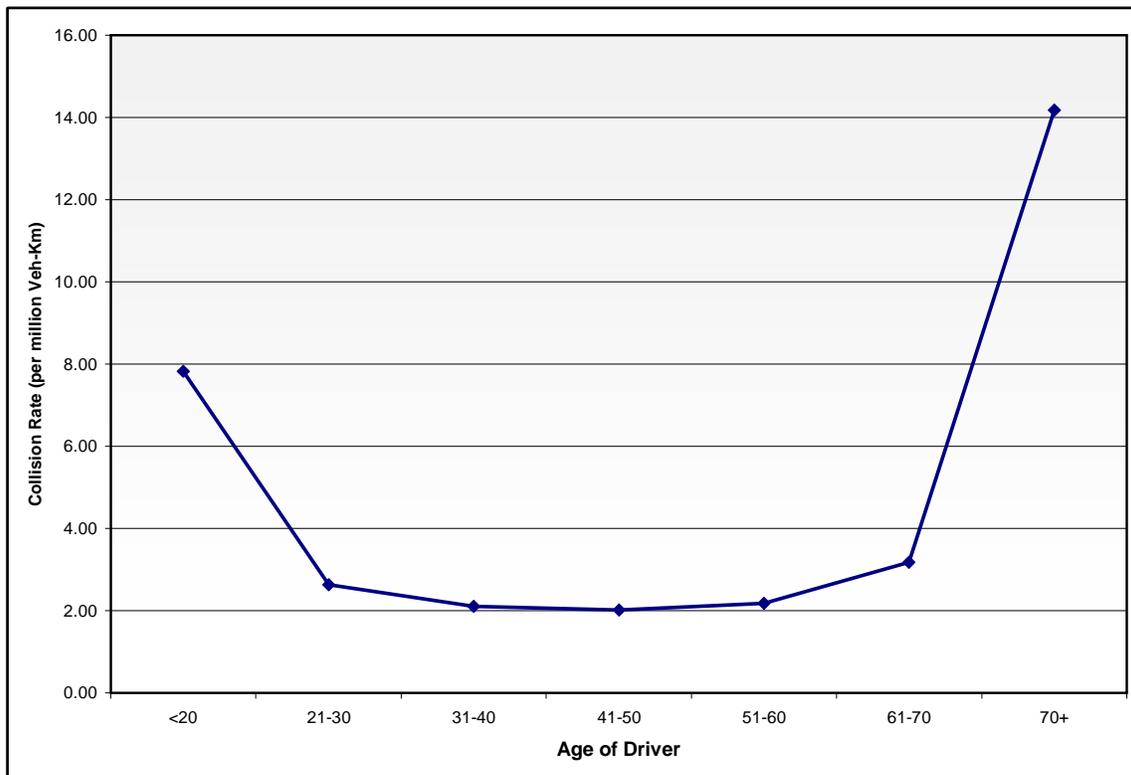
Age	Year											Average
	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	
<20	23	12	12	12	15	4	13	15	6	9	4	11.36
21-30	162	202	206	173	167	155	166	142	137	127	88	156.82
31-40	161	254	258	208	238	203	233	219	173	185	186	210.73
41-50	127	180	187	180	170	168	181	152	146	200	177	169.82
51-60	64	83	100	81	117	89	107	138	102	115	111	100.64
61-70	27	23	14	14	23	31	28	25	32	37	28	25.64
>70	11	5	3	3	5	3	5	2	4	5	2	4.36
Unknown	35	45	48	34	36	35	31	36	41	31	35	37.00
Total	610	804	828	705	771	688	764	729	641	709	631	

**Table 4 – Commercial Truck Collision Rates by Driver Age, New Brunswick 1993-2003**

Age	Year											Average
	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	
<20	15.8	8.3	8.3	8.3	10.3	2.8	9.0	10.3	4.1	6.2	2.8	7.8
21-30	2.7	3.4	3.5	2.9	2.8	2.6	2.8	2.4	2.3	2.1	1.5	2.6
31-40	1.6	2.5	2.6	2.1	2.4	2.0	2.3	2.2	1.7	1.8	1.8	2.1
41-50	1.5	2.1	2.2	2.1	2.0	2.0	2.2	1.8	1.7	2.4	2.1	2.0
51-60	1.4	1.8	2.2	1.8	2.5	1.9	2.3	3.0	2.2	2.5	2.4	2.2
61-70	3.3	2.8	1.7	1.7	2.8	3.8	3.5	3.1	4.0	4.6	3.5	3.2
>70	35.8	16.2	9.8	9.8	16.2	9.8	16.2	6.5	13.0	16.2	6.5	14.2

Included in Table 4 are the average collision rates for each age group, which were plotted and are depicted in Figure 1. The data presented show the highest accident rates of commercial vehicles occurring in the youngest and oldest age groups. This finding is consistent with previous studies of collision rates among different age groups of all drivers. The data show a decrease in accident rates from the youngest group of drivers to the 21-30 range. Gradual decreases continue through the ages until a slight increase in the rates of the 51-60 year

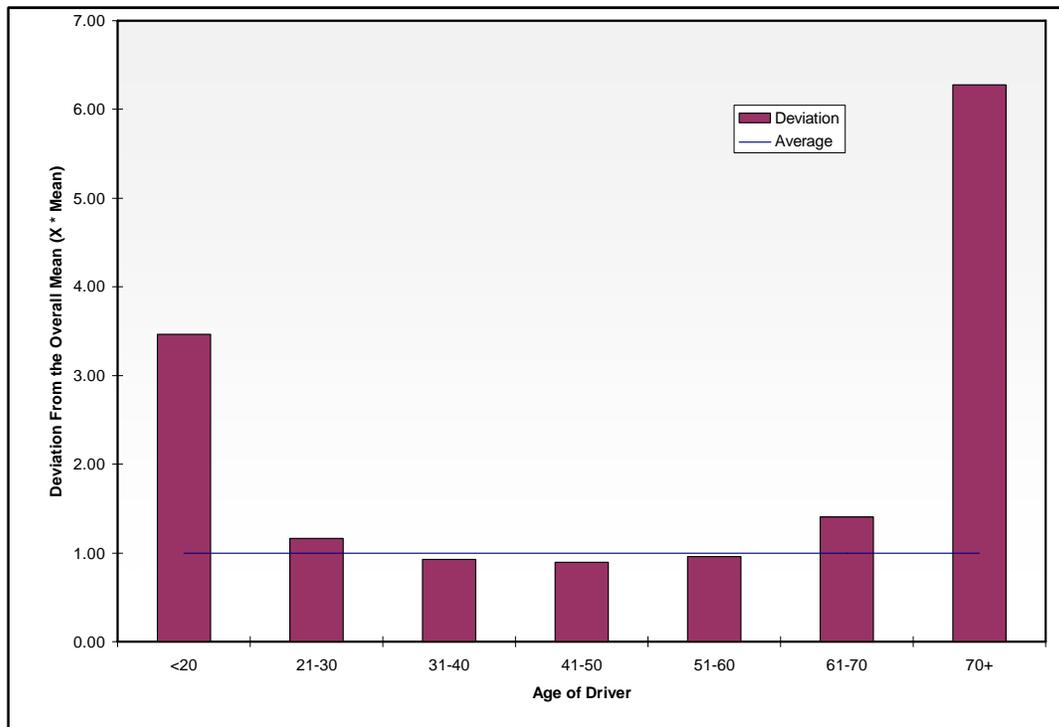
old drivers; and even higher increases in the subsequently older groups. The data calculated for the 61-70 year old drivers show a 57 percent increase over that of the lowest average collision rate (of the 41-50 year old drivers). The data for the oldest group show exceptionally high accident rates per million driver kilometres, with an average rate of 14.18, which was calculated to be over 600% higher than that of the 41-50 year old drivers.



**Figure 1 – Average NB Commercial Truck Collision Rates Per Million Vehicle Kilometres by Driver Age**

An overall mean rate of collisions was determined from the data to be used as a comparative reference for the collision rates of each age group of drivers. This involved calculating the average annual total collisions from Table 3, which equaled 716.4 collisions per year. The overall mean rate of collisions was then determined by dividing this number by the total annual distance travelled in New Brunswick, which was 317,062,578 kilometres. From this the resulting mean rate was determined to be 2.26 collisions per million kilometres travelled in New Brunswick. This mean

rate was plotted along with the deviations from the mean of the collision rates for each age group of drivers. These data are portrayed in Figure 2. The data show the collision rates of the youngest drivers to be about 3.5 times higher than the mean, while the oldest group of drivers was found to experience collision rates that were approximately 6.3 times higher than the mean. The 61-70 year old commercial truck drivers were found to have collision rates equal to about 1.4 times higher than the overall mean rate of collisions.



**Figure 2 – Deviations of Collision Rates by Age of Driver from the Overall Mean Collision Rate**

The collision rates found in this study form the similar U-shape plot as discussed earlier, with the highest rates found among the youngest and oldest drivers. Converting the data found in the NHTSA study to collisions per million kilometers traveled provides a comparison of all drivers to commercial truck drivers. The converted results from this study were averaged into similar age subgroups used in this study for comparison. Both sets of data were plotted in Figure 3, allowing the following comparisons to be made:

- Comparing the relative rates of commercial truck drivers in New Brunswick with those found for general drivers in the study by NHTSA show higher rates overall among the general drivers.
- Collision rates of the older drivers (61 years old and over) were higher among commercial truck drivers
- The average collision rate value for all general drivers in the age range of 61-70 years old was 3.01 compared to 3.17 for commercial truck drivers (per million

kilometres traveled). Commercial truck rate was 5.3 percent higher.

- The average collision rate value for all general drivers over 70 years old was 4.85 compared to 14.18 for commercial truck drivers (per million vehicle kilometres traveled). The commercial truck rate was 192 percent higher.

## 5.2 Collision Severity

The database was sorted by accident severity and the collision rates found separately for property damage only, personal injury and fatal collisions. The property damage and personal injury collision rates both formed U-shape plots where the youngest and oldest groups of drivers experienced the highest rates. Fatal collision rates did not follow this pattern. Rates were highest among the 41-50 year old commercial vehicle drivers, followed by the youngest group and then the 61-70 year old drivers. There were no fatal collisions by the over 70 drivers during the study period.

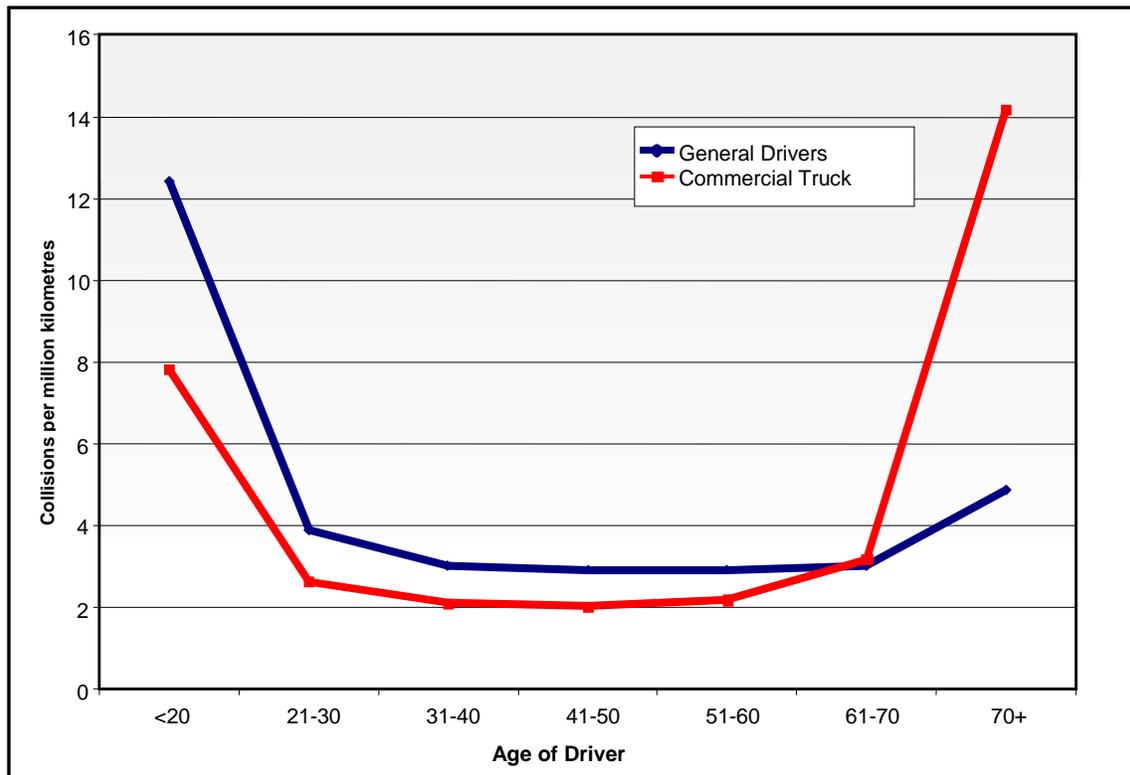


Figure 3 – Comparison of Collision Rates of General Drivers to Commercial Drivers by Age

### 5.3 Contributing Factors

It was desirable to gain insight into some of the more common causes of heavy vehicle accidents for these older groups, since they appeared to have been over-represented in collisions in New Brunswick from 1993 to 2003. The collision data describing those accidents involving commercial vehicle drivers over 60 years of age were separated from the other age groups. Separate files were also made for the middle-aged drivers (21-60) and the youngest drivers (less than 20 years old). These data were all sorted by the first listed major contributing factor. It is standard practice in New Brunswick to list the most prominent contributing factor for a collision as the first of up to four that can be captured on the collision report form. The number

of occurrences of contributing factors were determined and divided by the total number of accidents involving older commercial drivers (and middle-aged and youngest). The data in Table 5 show the contributing factors with the top seven most occurrences among the oldest groups of drivers, with comparisons given with respect to the middle-aged and youngest drivers.

These factors include a mix of driver condition, driver action, vehicle condition and environmental condition factors and make up a little less than 50 percent of all the accidents of concern. Driver inattention was reported as having the most occurrences of contributing to collisions involving all three age groups of commercial vehicle drivers.

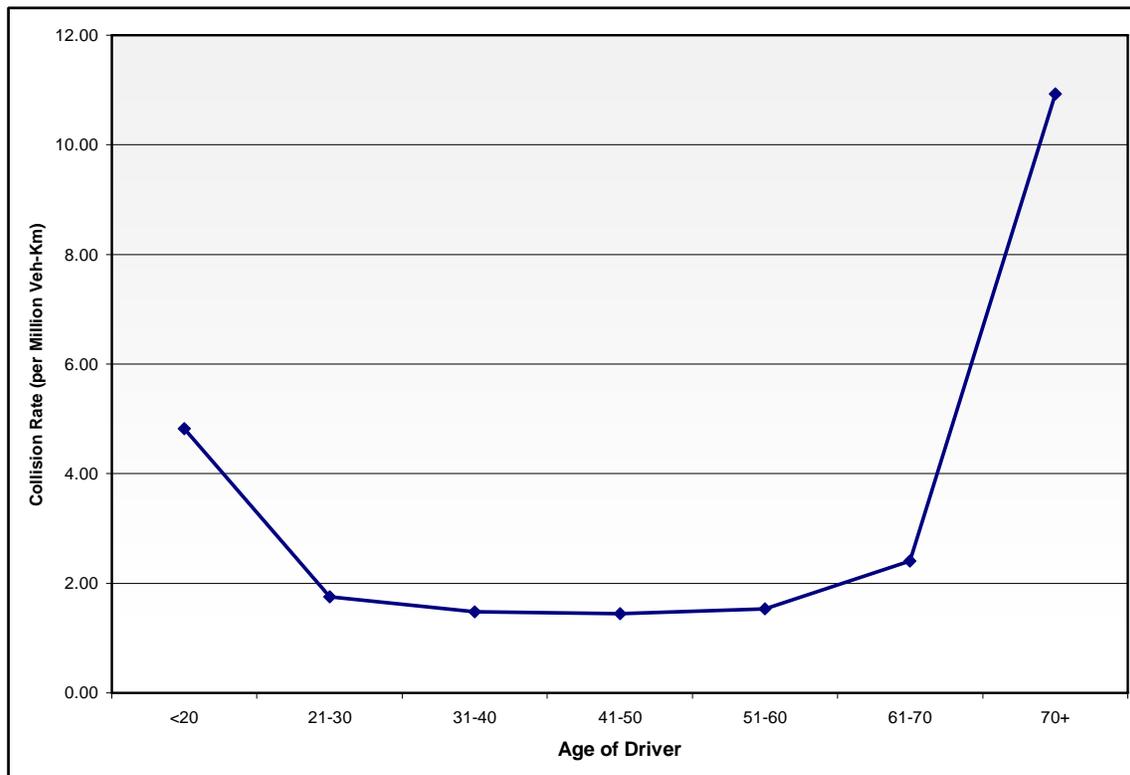
**Table 5 – Most Common Contributing Factors in Commercial Vehicle Collisions Involving Older Drivers**

Major Contributing Factor	Percent Occurrence		
	Younger (<20)	Middle-Aged (21-60)	Older (>60)
Driver Inattention	30.4	22.6	28.0
Animal Action (for Moose)	1.6	5.5	4.8
Failure to Yield Right-of-Way	3.2	1.8	3.3
Surface Slippery	4.0	6.8	3.0
Load Shift	1.6	1.6	2.4
Driver Distraction	2.4	1.8	2.1
Turning Improper	1.6	1.3	2.1

#### 5.4 Multiple Vehicle Collisions

Previous studies have found elderly drivers to be over-represented in multiple vehicle collisions. Multiple vehicle collisions accounted for 71 percent

of all commercial truck collisions which occurred during the study period. These multiple vehicle collisions were sorted by driver age and the multiple vehicle collision rates for each age group found using the same procedure as discussed above. The data presented in Figure 4 depict the results.



**Figure 4 – Multiple Vehicle Collision Rates Involving Commercial Trucks by Driver Age**

The highest rates of multiple vehicle collisions involving commercial trucks occurred in the oldest group of drivers, with an average rate of 10.93 collisions per million kilometres travelled. The rate for the 61-70 year old drivers is second only to the youngest group of drivers. The 61-70 year old drivers experienced an average rate of 2.41 multiple-vehicle accidents per million vehicle kilometres travelled, which was about 67 percent higher than the lowest rate that occurred in the 41-50 year old drivers.

The most commonly reported contributing factors of the multiple vehicle collisions involving an older commercial vehicle driver are presented in Table 6.

**Table 6 – Contributing Factors of Multiple Vehicle Collisions Involving Older Commercial Truck Drivers**

Major Contributing Factor	Percent Occurrence
Driver Inattention	30.2
Failure to Yield Right-of-Way	4.4
Turning Improper	2.8
Backing Unsafely	2.4
Surface Slippery	2.4
Following Too Closely	2.0
Taking Avoiding Action	1.6
View Obstructed/Limited	1.6

The data was arranged to determine collision configuration for both roadway and intersection collisions involving older drivers, shown in Table 7. It should be noted that 52.6 percent of the multiple vehicle collisions occurred at an intersection with some type of other facility. Some data in the table is broken down into more detail; however, in some cases the numbers for the additional configurations do not add up to their parent configuration due to unknown variables in the database. The data show rear-ending type accidents were the most common among these drivers for both roadway and intersection accidents, followed by accidents in which the vehicles involved were initially traveling in opposite directions (roadway) and right angle collisions (intersection)

**Table 7 –Configurations of Collisions Involving Older Commercial Truck Drivers**

<b>Configuration</b>	<b>Roadway Accidents</b>		<b>Intersection Accidents</b>	
	<b>Number</b>	<b>Percentage</b>	<b>Number</b>	<b>Percentage</b>
<b>Hit Stationary Vehicle</b>	12	17.6	4	5.1
--Drove Into	7	10.3	2	2.5
--Backed Into	5	7.4	2	2.5
<b>Rear-Ended Moving Vehicle</b>	17	25.0	24	30.4
<b>Right Angle Collision</b>	7	10.3	21	26.6
--Front Impact	2	2.9	17	21.5
--Side Impact	2	2.9	0	0.0
--Rear Impact	2	2.9	2	2.5
<b>Same Direction</b>	1	1.5	3	3.8
<b>Opposite Direction</b>	16	23.5	12	15.2
<b>Vehicle Turning</b>	7	10.3	9	11.4
--Same Direction	7	10.3	5	6.3
--Opposite Direction		0.0	4	5.1
<b>Other</b>	8	11.8	6	7.6

## 5.5 Vehicle Type

The data was sorted by vehicle type code and then by driver age for each of the 11 years and placed in three different worksheets, one for each vehicle type. For each year within each vehicle type, the total was determined for each age category of driver involved in an accident. The average was found for

each age group, resulting in three sets of averages, one for each vehicle type. The resulting data were plotted in Figure 5. The data show the majority of all commercial truck accidents involved a truck tractor with towed unit. Among the collisions involving an older commercial vehicle driver, both truck tractor with towed unit and trucks 4,500kg and over were nearly equally represented.

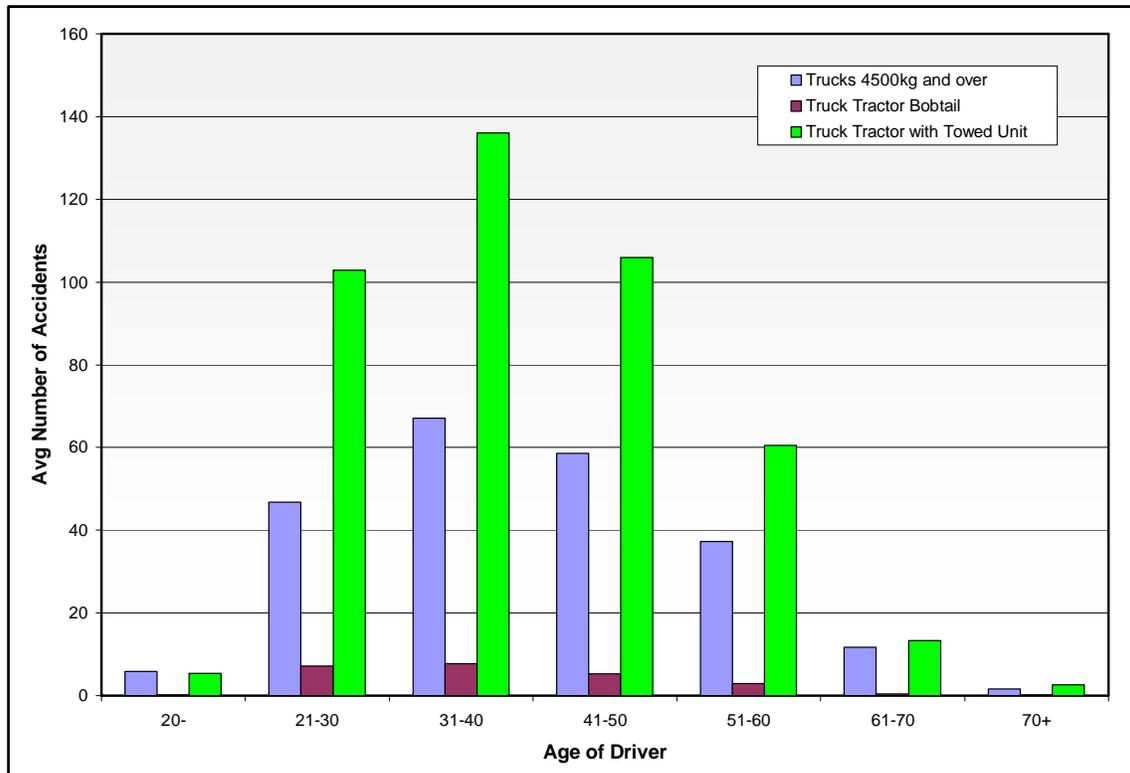


Figure 5 – Collision Involvement by Commercial Vehicle Type and Driver Age

## 6. Conclusions

- Collision rates were highest among the oldest group (over 70 years old) of commercial truck drivers.
- When compared to the overall mean collision rate, the rates for the 61-70 year old drivers were 1.4 times higher, while drivers over 70 years old experienced rates 6.3 times higher.
- When commercial truck collision rates were compared to those of drivers in general, the overall rates were higher for the general drivers; except in the case of the older groups of drivers who experienced rates from 5.3 to 192 percent higher than drivers in general of the same age.
- Driver inattention was the leading contributing factor in commercial vehicle collisions for all ages.
- The oldest group of drivers (over 70) have experienced the highest proportion of multiple vehicle collisions, with inattention and failure to yield right of way as the leading causes.
- 52.6 percent of multiple vehicle collisions involving an older commercial truck driver occurred at an intersection.
- Rear-ending was the most common collision configuration among both roadway and intersection collisions involving an older commercial truck driver.
- Among the collisions involving an older commercial truck driver, both truck tractor with towed unit and trucks 4500kg and over were near equally represented.

## 7. Recommendations

An aging commercial truck driver workforce is a reality that needs to be monitored to ensure road safety is not compromised.

In order to fully assess the safety of older commercial truck drivers, reliable measures of exposure (e.g., kilometres driven) should be kept on a regular basis. This would provide frequent safety comparisons of the older drivers to the younger drivers.

The performance in other commercial categories (e.g. busses, trains and other heavy equipment) should also be investigated.

Determining fitness to drive should continue to be a priority of the medical professional to ensure a driver's safety. Medical standards for drivers set forth by the Canadian Council of Motor Transport Administrators (CCMTA) may provide reasonable guidelines.

Mandatory medical testing based on license class should continue to be governed by the provinces. All jurisdictions should comply with the minimum medical qualifications set out in the National Safety Code for Motor Vehicles. The National Safety Code states that medical reports be filed for Class 1 and 3 commercial vehicles at least every five years to age 45, every three years to age 65, and annually thereafter.

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## 9. Acknowledgements

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