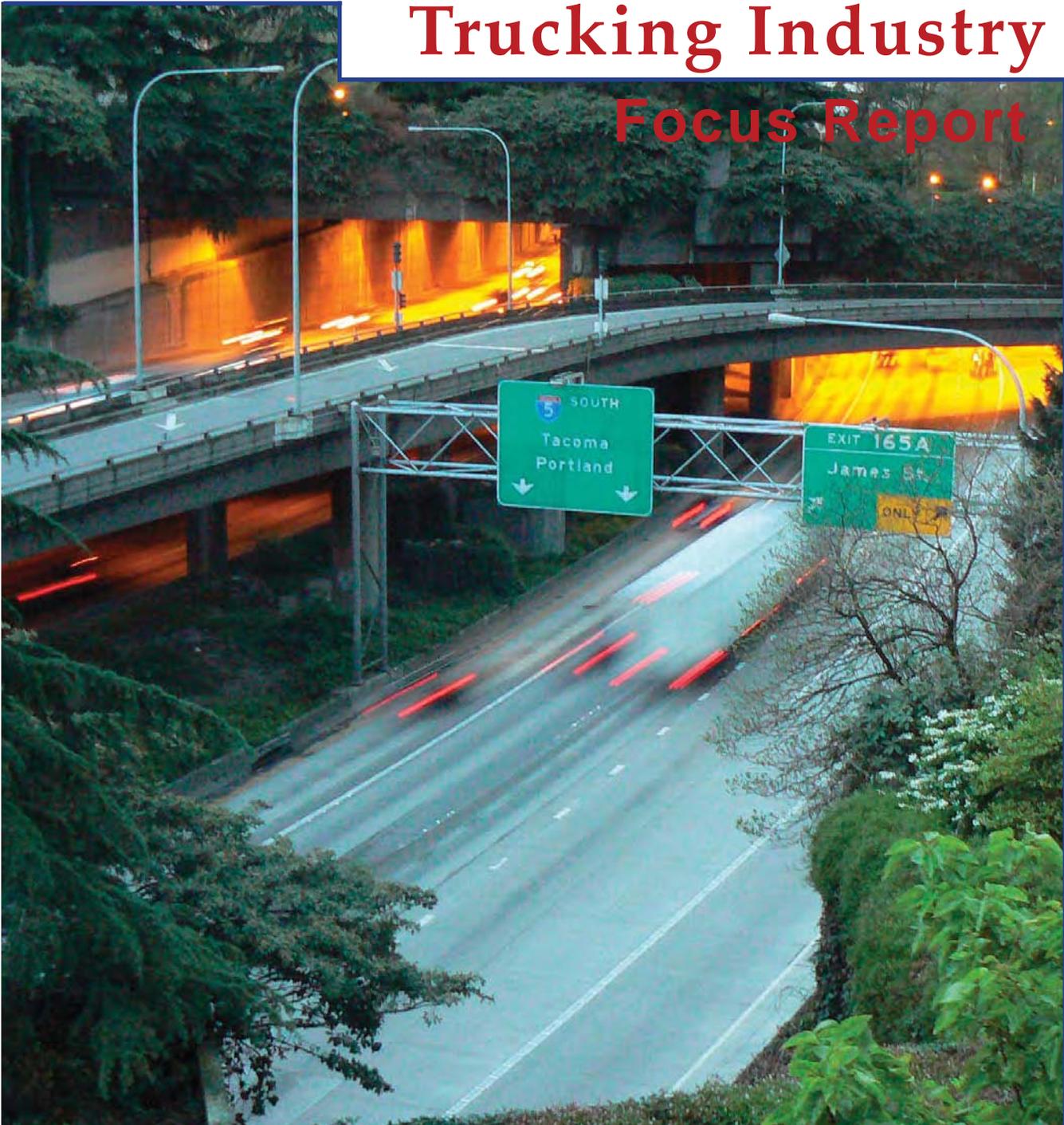


Preventing Injuries in the Trucking Industry Focus Report



Technical Report Number 90-17-2008

Preventing Injuries in the Trucking Industry Focus Report 1997 - 2005

Technical Report Number 90-17-2008

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1997-2005

Preventing Injuries in the Trucking Industry



Research for Safe Work



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ABOUT TIRES

The Trucking Injury Reduction Emphasis (TIRES) Initiative was developed by the SHARP research program at the Washington State Department of Labor and Industries. The trucking industry has some of the highest workers' compensation claim rates and costs in Washington State. Preventing on the job injury is the focus of the TIRES Initiative. The TIRES research team is working with industry leaders, safety and health professionals, employers, drivers, warehouse and dock workers, and many others to develop educational materials that identify hazards and provide low-cost, simple solutions to prevent injuries in the trucking industry.

SUMMARY

This Focus Report provides detailed information on injuries in Washington State's trucking industry. The trucking industry has some of the highest workers' compensation claim rates and costs in Washington State. Data in this report are from 1997-2005 (fatalities from 1998-2005), with detailed data for the four largest trucking sub-sectors (General Freight, Specialized Freight, Couriers and Messengers, and Waste Management). This report is further broken down to describe the four most common and costly injury types (upper extremity musculoskeletal disorders, falls, struck by or against and motor vehicle collisions) for the industry as a whole and for each large sub-sector. From 1997-2005 there were over 21,000 lost work time claims and almost 38,000 medical only claims in Washington's trucking industry. This report provides employers, supervisors, employees in the trucking industry, along with safety and health professionals, with information on claims, claim rates, costs, common causes and prevention ideas. By engaging and working with industry and other stakeholders, TIRES develops educational materials to prevent injuries in the trucking industry.

Key Words: trucking industry, occupational injuries, workers' compensation, trucking economy, general freight truck transportation, specialized freight truck transportation, couriers and messengers service, waste management and remediation services

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Each year 1 out of every 13 truck drivers has a work-related injury that results in a lost work time workers' compensation claim. This report provides employers, supervisors, employees, and safety and health professionals in the trucking industry with information on claims, claim rates, costs, common causes and prevention ideas.

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For this report the Washington State trucking industry includes employers with Labor and Industries business accounts classified in one of the following North American Industrial Classification System (NAICS) codes:

Trucking Industry

NAICS 4841 General Freight Trucking

484110 Local

484121 Long-Distance, Truckload

484122 Long-Distance, Less Than Truckload

NAICS 4842 Specialized Freight Trucking

484210 Used Household & Office Goods Moving

484220 Local

484230 Long-Distance

NAICS 492 Couriers and Messengers

492110 Couriers

492210 Local Messengers and Local Delivery

NAICS 5621 Waste Collection

562111 Solid Waste Collection

562112 Hazardous Waste Collection

562119 Other Waste Collection

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The Economic Data

The information on the value of the services produced by the trucking industry for Washington State was provided by the Bureau of Economic Analysis of the US Department of Commerce. For the value of shipments carried by truck within Washington State we used the Freight Analysis Framework database of the Federal Highway Administration. Information on employment, wages and age of drivers comes from a special analysis of the unemployment insurance database performed by the Washington State Employment Security Department. Finally, information on the changing structure of the US trucking industry comes from a CDC/NIOSH report *Truck Driver Occupational Safety and Health: 2003 Conference Report* and from *The Freight Story: A National Perspective on Enhancing Freight Transportation* produced by the Federal Highway Administration.

The Injury Data

The workers' compensation data for this report is provided by Washington State Department of Labor and Industries (L&I).

This report includes workers' compensation claims with injuries occurring from January 1, 1997 to December 30, 2005.

Workers' compensation claims are divided into two groups: medical-only and lost work time. Medical-only claims involve only medical expenses. Lost work time claims involve injuries with four or more days of lost work time compensation, total permanent disability, fatality or the worker being kept on salary. Unless stated otherwise all data for costs, injury counts and injury rates are for lost work time claims.

Data for this report were extracted on November 13th, 2007. Injuries which occurred during the study period may after the extraction date become lost work time claims

and have increased costs. This is called 'development'. Therefore, future data extractions for the same time period may reflect slightly increased costs and claim counts.

The L&I workers' compensation database includes a complete listing of the Self Insured lost work time claims, but not all medical-only claims, costs or lost work time days. To estimate the number of medical-only Self Insured claims we applied the State Fund medical-only lost work time ratio to the Self Insured lost work time claims. We used the State Fund average lost work time claims' cost and lost work time days to estimate the costs and lost work time for the Self Insured claims.

Owner-operators are not required to have workers' compensation coverage so their injury experience is not captured in this report. Truck drivers working in non-trucking industries are not included in this report. Log carriers are included in agriculture and are not captured in this report. Under-reporting of work-related injuries to workers' compensation systems is known to occur. Therefore injury rates in this report are likely an underestimate of the true burden of occupational injury in this industry.

Employers report hours worked by employees to L&I. We used these hours to estimate a full-time equivalent employee (FTE). A FTE is 2000 hours for one work year.

The Washington State Fatality Assessment and Control Evaluation (FACE) program provided the trucking fatality data from 1998-2005.

INJURY TYPES

The Type of Injuries

This report groups the claims into six main injury type categories.

1. Musculoskeletal disorders of the neck, back, and upper extremity
2. Falls from elevation
3. Falls on the same level
4. Struck by or against injuries
5. Vehicle-related injuries
6. All other injuries

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What is a 'Musculoskeletal Disorder'?

A 'Musculoskeletal Disorder' (MSD) worker injury results from non-impact overexertion or bodily reaction that affects nerves, tendons, muscles, or supporting body structure that happens over time.



What is a 'Fall from Elevation'?

A 'Fall from Elevation' worker injury results from falling from an elevated work surface to a lower level.



What is a 'Fall on the Same Level'?

A 'Fall on the Same Level' worker injury results from trauma from falling to the work surface on which they are working.



What is a 'Struck By or Against an Object' Injury?

A 'Struck By or Against an Object' worker injury results from impact between an injured person and a source. Either the source or worker can be moving or stationary.



What is a 'Vehicle-Related' Injury?

A 'Vehicle-Related' worker injury results from a collision or non-collision while inside a vehicle.

TRUCKING ECONOMY

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TRUCKING ECONOMY

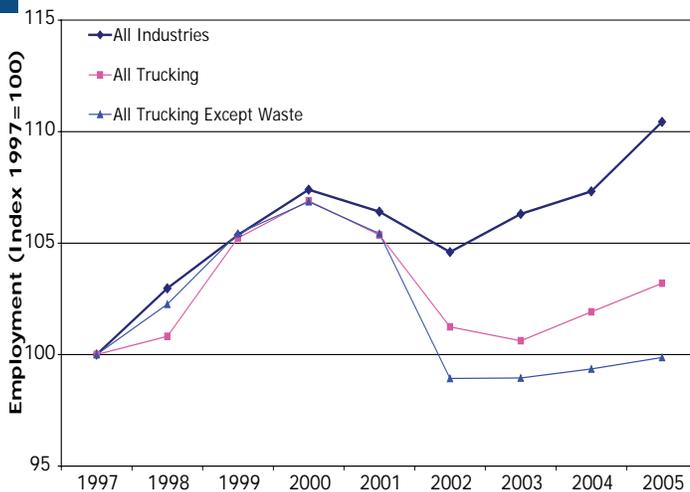
The Trucking Economy

In 2005 the Washington State for-hire truck transportation industry generated over \$1.8 billion in output while providing employment to over 48,000 workers. But the importance of the trucking industry to the state economy far exceeds its share in either gross state product or employment. As the floods which shut down Interstate 5 in December 2007 demonstrated, a large part of the state economy is dependent upon the trucking sector. In 2002 the value of all goods carried by truck in Washington State was \$237 billion. Freight transportation increases the value of goods by moving them to where they are worth more, and it spurs competition among producers as it increases the geographic boundaries of the markets in which they compete. The trucking industry has also seen significant technological change. Along with improvements in inventory control and warehousing, the cost of moving freight has fallen by half as a percentage of Gross Domestic Product (GDP) since 1980. The following charts show the growth in real output and employment in Washington State from 1997-2005.

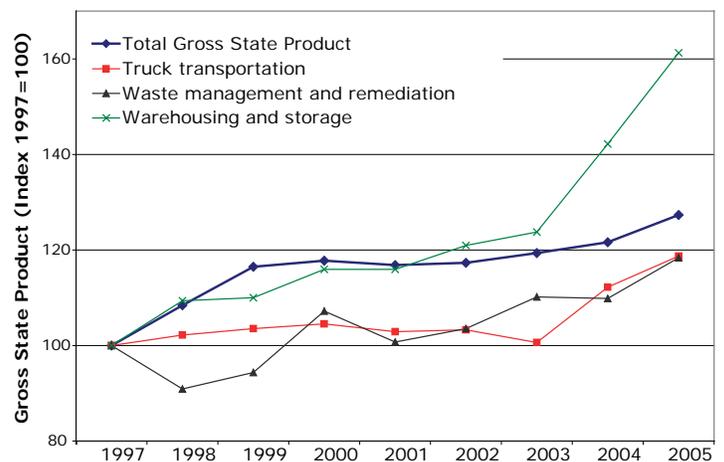
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1997-2005

Growth of Employment by Industry, Washington State, 1997-2005



Growth of Real State Output by Industry, Washington State, 1997-2005



Each chart shows that growth in real state output and employment far exceeds that of the trucking industry. The ability of the state economy to continue to increase the volume and value of freight transported without increasing the workforce is an indication of the improvements in labor productivity which this sector has achieved. For example, in the long-distance truck transportation sector, unit labor costs have declined by 10% since 1997. The importance of the trucking transportation sector is expected to grow as the production of goods occurs increasingly at a remote distance from final markets. As the nation's most trade-dependent state, the trend toward increasing reliance upon freight transportation is expected to be especially acute in Washington State.

TRUCKING ECONOMY

Economic Factors Increasing Risk of Injury

With the deregulation of trucking in 1980 came a number of changes to the structure of the trucking industry and to the trucking workforce which may increase the risk of injury or present challenges to the reduction of hazards. First, as the barriers to entry fell with the elimination of route assignments and commodity restrictions there was a major increase in the number of trucking companies in the United States, from 216,000 in 1990 to over 500,000 in 2000. In-house trucking declined, as manufacturers and wholesalers outsourced these functions to the for-hire trucking industry in order to reduce costs. Most of the new companies are very small businesses. Over 90% of trucking businesses have less than 6 trucks. In addition, a significant number of self-employed owner-operators entered the market. This change in structure to a more competitive form has resulted in reduced profit margins for trucking companies. This raises concerns that competitive pressures may lead to decreased investments in safety training and equipment.

A second major change in the economic environment for trucking companies has been the shift among manufacturers from an inventory-based “push” system to a manufacture-to-order “pull” system. This replaces expensive inventory with “just-in-time” production processes that depend upon timely delivery within very narrow schedules. This, together with the increasingly competitive industry structure, has weakened the bargaining position of trucking companies and places a tremendous performance burden on the trucking workforce to meet the demands of shippers and consignees. For

drivers this can mean increased pressure to make time schedules, as well as idle periods waiting for slots at shipping terminals. This lengthens working hours, increases the unpredictability of driving schedules, and increases the risk of injury to drivers.

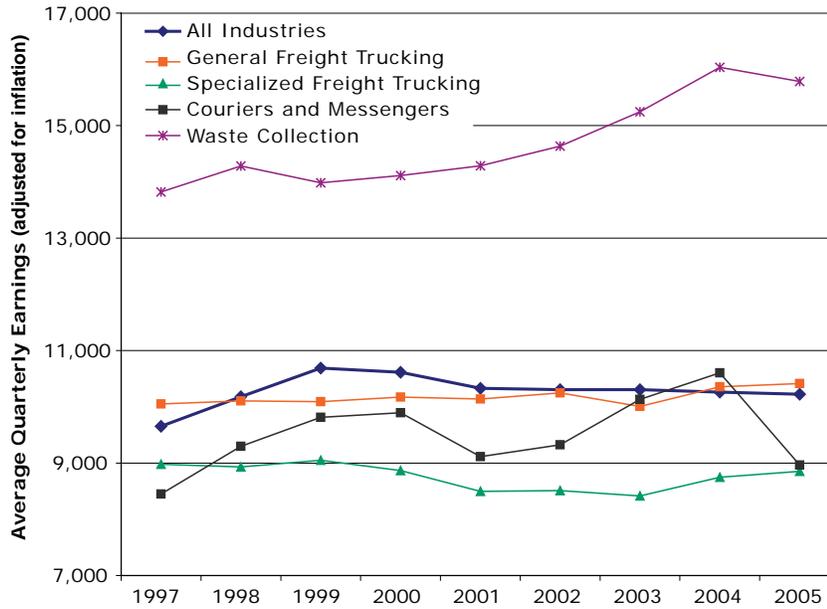
Alongside the rise of a more competitive industry structure there has been a parallel shift away from a high-wage, union-organized workforce toward lower-wage non-union drivers and owner-operators. Average real wages have declined nearly 30% as compared to levels in the 1970s and working hours have lengthened. Many drivers are exempt from overtime pay provisions. Some drivers are paid by the mile, and are not compensated for the time they spend waiting at the docks or performing tasks such as loading and unloading, which make up approximately 25% of their total work time. Low wages, coupled with work schedule unpredictability, result in higher than average driver turnover in the trucking industry. This in turn increases the risk of injury to drivers. The following chart shows the trend of earnings over time in Washington State for several trucking industry sectors as well as that for all industries as a whole. As can be seen, apart from the Waste Hauling and Remediation sector, real earnings in trucking have been stagnant and below average throughout the period 1997–2005. The significantly higher

TRUCKING ECONOMY

and increasing trend for Waste Hauling may be due to the fact that this sector is still characterized by large firms, a less competitive industry structure and higher rates of union representation.

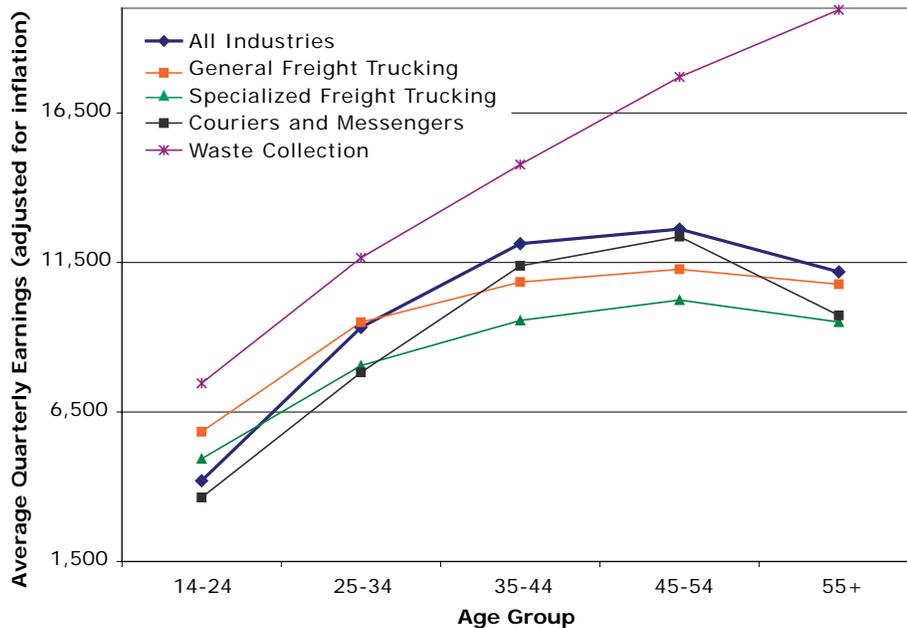
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1997-2005

Average Quarterly Earnings by Sector, Washington State, 1997-2005



The trucking industry, apart from Waste Hauling, is characterized by high turnover and high “churn” (the movement of drivers from company to company). The result of this is that the earnings profile of drivers over the course of their working lives is flatter than that for workers in other industries. The very different earnings profile for drivers in Waste Hauling may be due to the different market environment in which they operate.

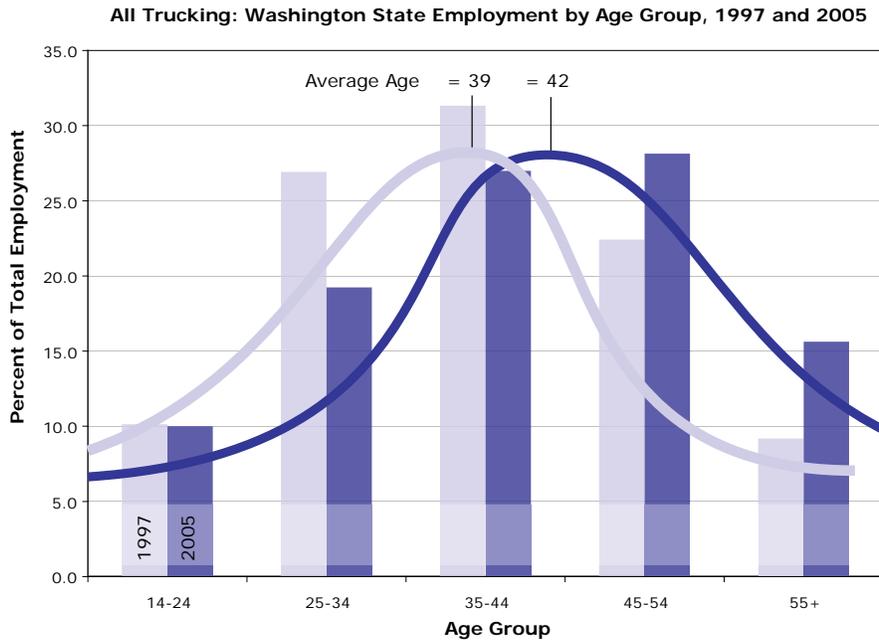
Average Quarterly Earnings by Age Group, Washington State, 2005



TRUCKING ECONOMY

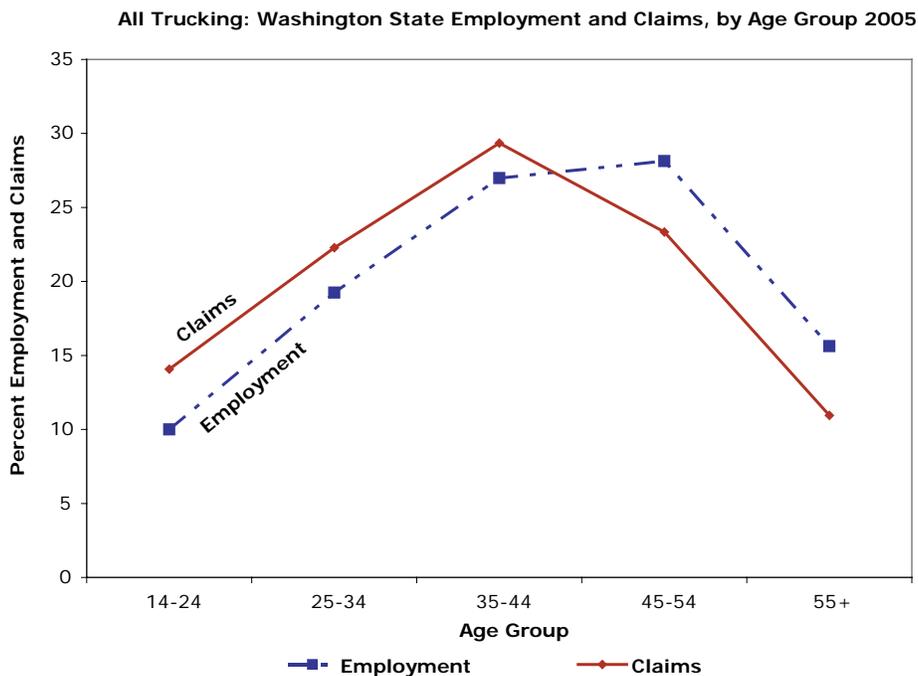
Demographic Shifts

As the wages and working conditions of truck drivers have changed it has become more difficult to recruit and retain younger workers to this industry. The result has been that the average age of the drivers has increased at a rate more than twice that of the workforce overall. Between 1997 and 2005 the average age of drivers in Washington State has increased from 39 to 42.



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1997-2005

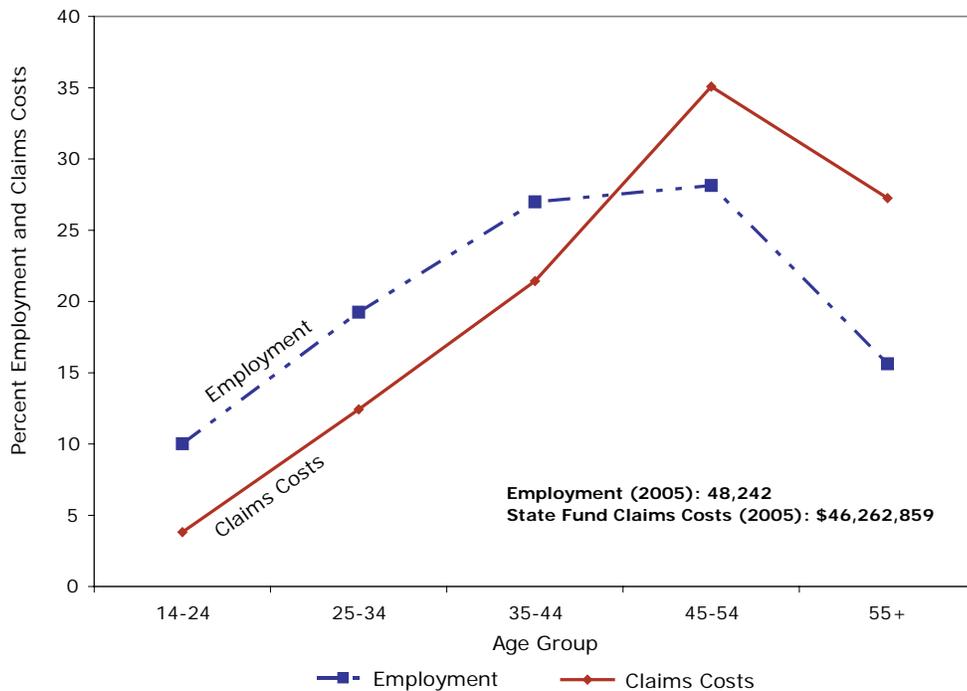
The impact of the aging workforce in trucking is likely to take two forms. On the one hand, evidence suggests that older workers tend to have fewer injuries than do younger workers in the same occupations. This may be due to greater experience, skill or a greater awareness of risk than that of younger workers. So as the following chart shows, the age distribution of workers' compensation claims is skewed toward higher claims rates among younger workers.



TRUCKING ECONOMY

On the other hand, the evidence also shows that when older workers do get injured they tend to take much longer to return to work, and their overall claim costs are much higher than that of young workers in spite of their fewer claims.

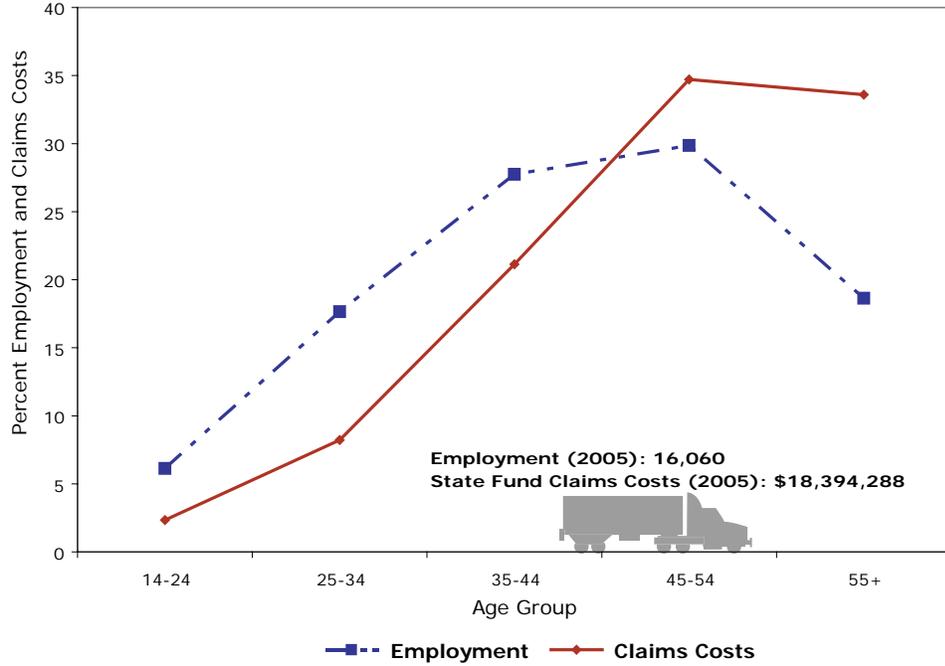
All Trucking: Washington State Employment and Claims Costs, by Age Group 2005



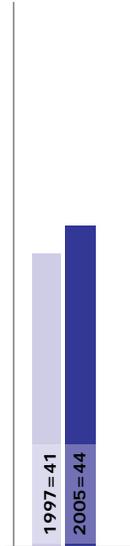
So while fewer injury incidents may occur as the trucking workforce ages, the industry as a whole is likely to experience more severe lost work time related claims' costs and higher premium charges for workers' compensation insurance. Charts showing the distribution of employment and claims costs for each individual industry within trucking are provided on the follow pages.

TRUCKING ECONOMY

General Freight, NAICS 4841:
Washington State Employment and Claims Costs, by Age Group 2005

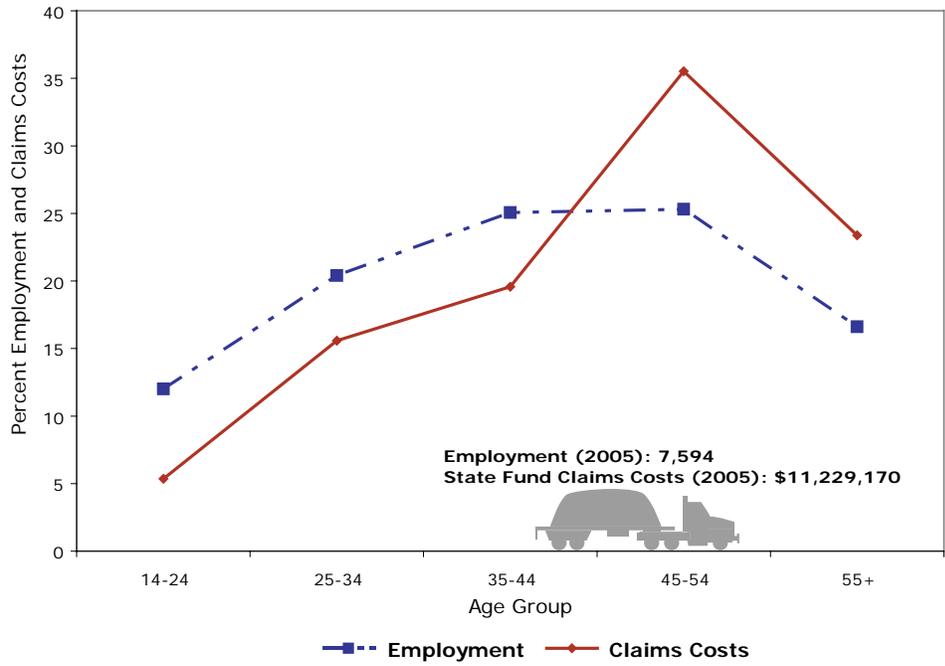


Average Age

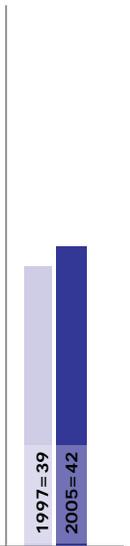


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Specialized Freight, NAICS 4842:
Washington State Employment and Claims Costs, by Age Group 2005



Average Age

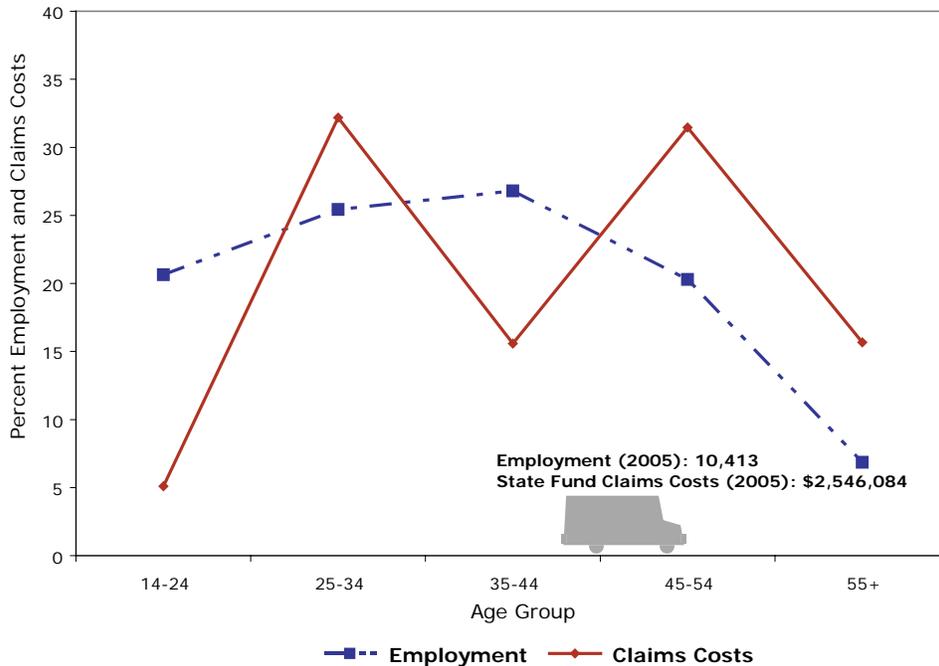


TRUCKING ECONOMY

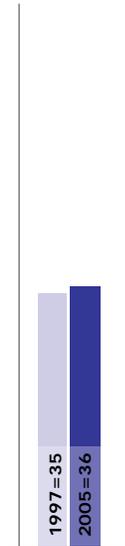
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1997-2005

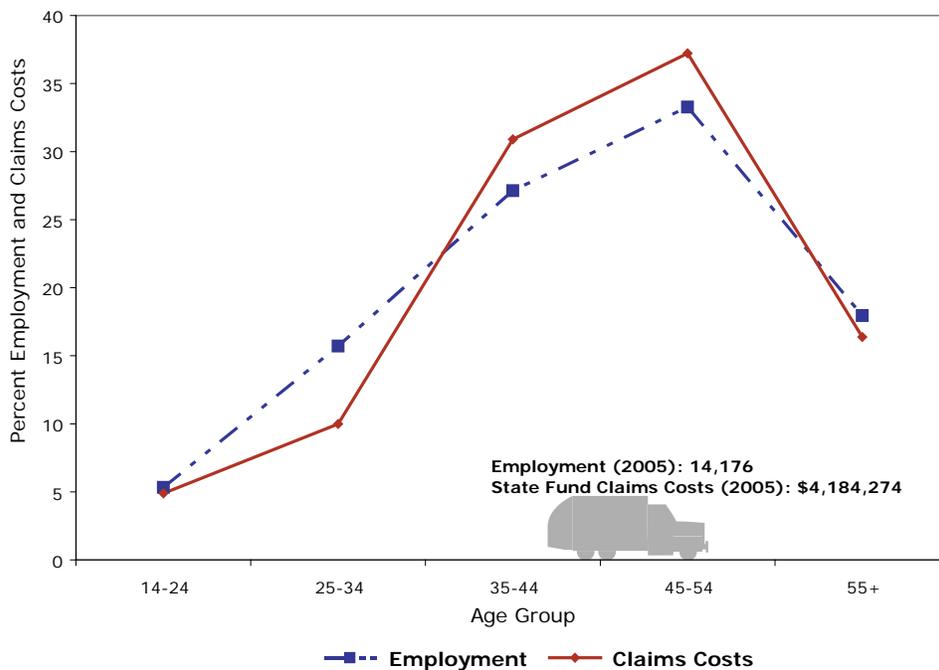
Couriers, NAICS 492:
Washington State Employment and Claims Costs, by Age Group 2005



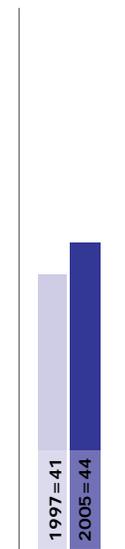
Average Age



Waste Collection, NAICS 562:
Washington State Employment and Claims Costs, by Age Group 2005



Average Age



OCCUPATIONAL FATALITIES

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TRUCKING FATALITIES

Fatal Occupational Injuries in the Trucking Industry

From 1998 through 2005* there were 63 trucking fatalities in Washington State.

On average 1 out of 4100 full-time employees will be fatality injured.

Over 60% of truck driver fatalities are Vehicle-Related. Almost 50% of these are due to loss of vehicle control, without collision with another vehicle on the highway.

All but 1 of the 63 work-related deaths were among men.

The average age of the fatality injured workers was 47 years old. Of the 63 fatalities, 55 were truck drivers.

Just how do the four Trucking Industry groups contribute to the fatality count?

Trucking Fatalities 1998-2005 by Trucking Industry

Industry subgroup	Deaths
General Freight	49
Specialized Freight	6
Couriers & Messengers	4
Waste Collection	4
Total	63

On average the Trucking Industry accounts for 10% of work-related fatalities in Washington State.

* The Fatalities and claims in the Occupational Fatalities section are from 1998 to 2005, this is due to the Washington State FACE program starting in 1998.

An injury pyramid shows deaths as the tip of the iceberg and ever increasing numbers for less severe injuries and exposures in the Trucking Industry.

Injury Pyramid All Trucking Industry Groups Combined



Case stories of fatalities:

“A truck driver attempting to take a tarp off his trailer was crossing the trailer’s hitch when he fell and hit his head on the concrete surface of a weighing scale.”

“A truck driver was on foot attempting to guide another driver backing his truck into a loading dock when he was struck by the truck and pinned against the loading dock.”

“A semi-trailer driver was killed when his truck swerved into the median of an interstate highway and overturned. He was not wearing a seat belt.”

“A truck driver traveling on a state highway went into a curve too fast and lost control of his vehicle and crashed.”

OCCUPATIONAL INJURIES

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TRUCKING INDUSTRY

Occupational Injuries in the Trucking Industry

On average 1 out of 5 Trucking Industry employees has an accepted medical-only workers' compensation claim at an average cost of \$700 per year. One out of every 13 trucking industry employees has a workers' compensation claim resulting in lost work time at an average cost of \$30,000 per year.

The annual direct cost of all Washington State workers' compensation claims was \$74 million per year or \$667 million for the 9 year study period.

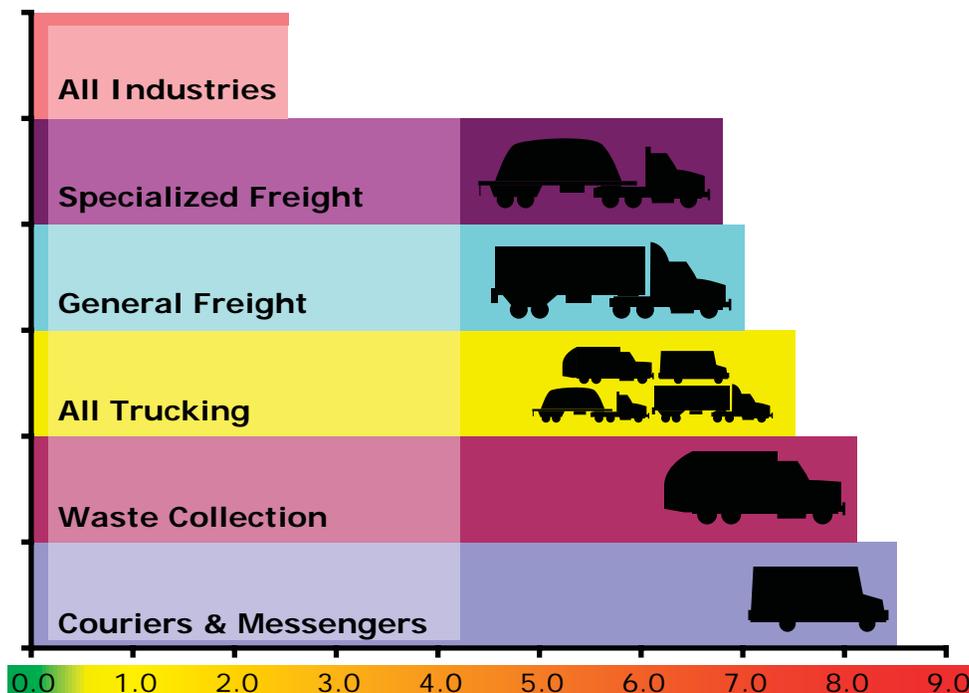
Workers compensation claim rates for the trucking industry decreased from 1997 to 2005. However, the trucking industry claim rates far exceeded those of all other Washington State Industries (see bar chart below)

The table below displays the estimated average and total cost of injury group types.

The Estimated Average Cost per Claim and Total Cost for All Claims

Injury Group Type	Lost work time claims	
	avg. estimated cost per claim	avg. total cost x 1,000,000
Vehicles	\$ 46,500	68
Falls from Elevation	\$ 36,700	69
Falls on Same Level	\$ 30,300	51
MSD	\$ 29,600	265
Struck by	\$ 23,700	68
Other	\$ 21,500	104
All types combined	\$ 29,500	641

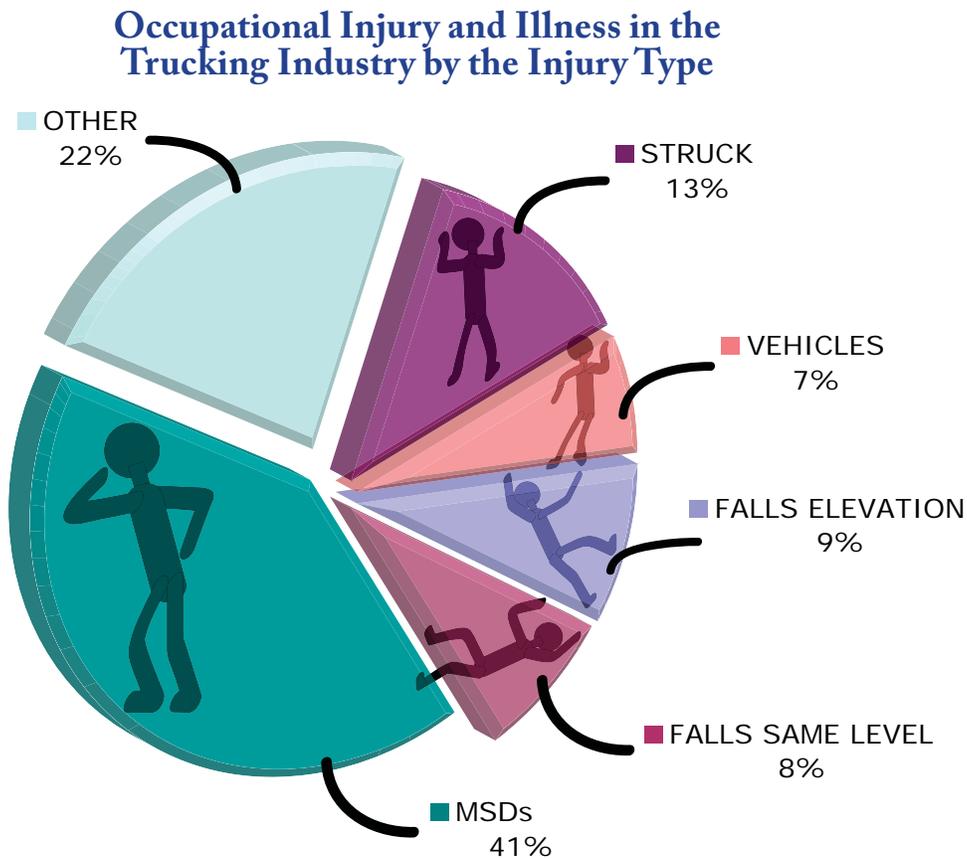
Injury Rates per 100 FTE for Trucking Industry Groups Compared to All Industries in Washington State



TRUCKING INDUSTRY

Types of claims

The most frequent claim type that results in lost work time claims is Musculoskeletal Disorders (MSDs). The common injury types in the trucking industry are presented below.



Of the 5,636 Trucking Industry accounts included in the study:

- 2,471 (44%) had an accepted claim.
- 1,827 (32%) had a lost work time claim.

TRUCKING INDUSTRY



Musculoskeletal Disorders (MSDs)

For the 48,000 workers in the trucking industry, MSDs account for

- 1000 lost work time claims per year.
- Over 40% of all lost work time claims.
- 1.7 million lost workdays - that's equivalent to 755 employees not working each year.

On average 1 out of every 32 trucking industry employees has an MSD claim that results in lost work time.

The total workers' compensation cost for MSD claims over the nine year period is \$270 million or the cost of

- 2,800 eighteen wheeler trucks.
- About 82 million gallons of diesel fuel.

The most common MSD claims are back sprains resulting from overexertion picking up a box or container.

Who is getting injured?

- 40% of all 'Truck Driver' claims are due to MSDs.
- Almost 50% of all 'Manual Handlers' claims are due to MSDs.

Case stories:

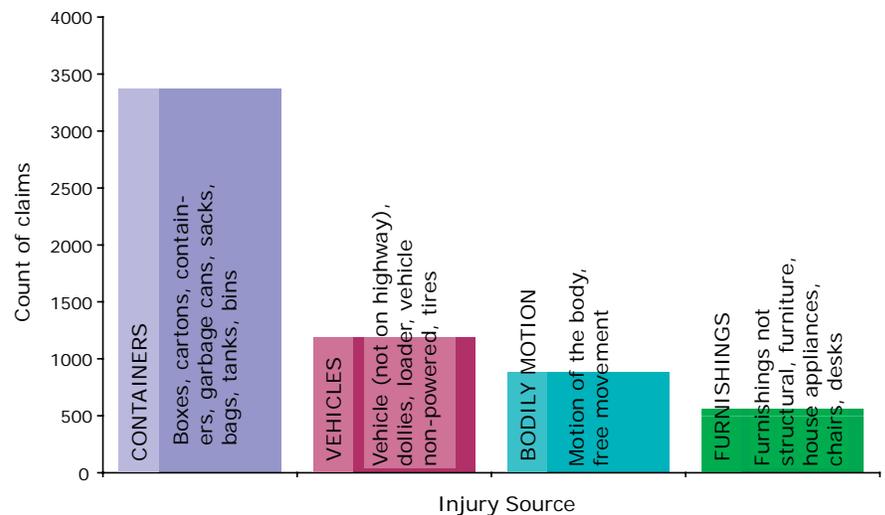
"While unloading a pallet from the back of the truck, hurt back."

"Hurt back while picking up garbage cans on route."

"Hurt shoulder from pulling fifth wheel."

"Picked up a 27 inch TV and turned at the same time and heard a pop come from my back."

Common Sources of Injury for MSDs



TRUCKING INDUSTRY



Falls From Elevation injuries

For the 48,000 workers in the trucking industry, Falls from Elevation account for

- 200 lost work time claims per year.
- Over 8% of all lost work time claims.
- 400,000 lost workdays - that's equivalent to 177 employees not working each year.

On average 1 out of every 150 trucking industry employees has a Fall from Elevation claim that results in lost work time.

The total workers' compensation cost for Falls from Elevation claims over the nine year period is \$69 million or the cost of

- 725 eighteen wheeler trucks.
- About 22 million gallons of diesel fuel.

Who is getting injured?

- 10% of all 'Truck Driver' claims are due to Falls from Elevation.
- Over 6% of all 'Manual Handlers' claims are due to Falls from Elevation.

Case stories:

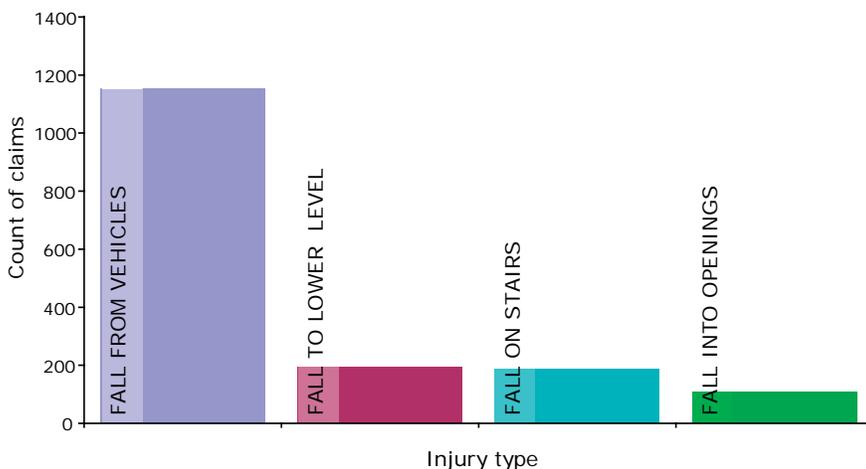
“Exited truck fell in mud caught myself on hands and toes popped something in right shoulder.”

“Stepping out of truck and missed last step.”

“Making a delivery was on top of truck and slipped and fell landing on head.”

“Stepped into a hole that was about an 18 inch drop when I got out of my truck. I fell backwards on to the ground hitting my back.”

Common Types of Injury for Falls from Elevation



The most common Falls from Elevation are back & knee sprains resulting from falling out of a vehicle to the ground outside.

TRUCKING INDUSTRY



Falls on Same Level injuries

For the 48,000 workers in the trucking industry, Falls on Same Level account for

- 190 lost work time claims per year.
- About 8% of all lost work time claims.
- 323,000 lost workdays - that's equivalent to 143 employees not working each year.

On average 1 out of every 170 trucking industry employees has a Fall on Same Level claim that results in lost work time.

The total workers' compensation cost for Fall from Same Level over claims the nine year period is \$51 million or the cost of

- 535 eighteen wheeler trucks.
- About 15 million gallons of diesel fuel.

Who is getting injured?

- 9% of all 'Truck Driver' claims are due to Falls on Same Level
- About 6% of 'Manual Handlers' claims are due to Falls on Same Level.

Case stories:

"Releasing winch lifted latch in a stretched position; lost balance fell on buttocks."

"Pulling tire chains around tires; slipped on ice fell on side."

"Unload truck with pallet jack, weight of contents of the pallets approximately 1,500 lbs. Had to pull pallets to the back of the truck; while pulling pallet jack slipped and fell in the truck."

"I was pulling a skid of wire with my pallet jack, my feet slipped on something on the floor and fell on my butt."

The most common Falls on Same Level claims are back and knee sprains resulting from falling to the ground outdoors or work surface

TRUCKING INDUSTRY



Struck By or Against Injuries

For the 48,000 workers in the trucking industry, Struck by or Against account for

- 320 lost work time claims per year.
- Over 13% of all lost work time claims.
- 380,000 lost workdays - that's equivalent to 168 employees not working each year.

On average 1 out of every 100 trucking industry employees will have a Struck by or Against claim that results in lost work time.

The total workers' compensation cost for Struck by or Against claims over the nine year period is \$68 million or the cost of

- 715 eighteen wheeler trucks.
- 21 million gallons of diesel fuel.

Who is getting injured?

- 12% of all 'Truck Driver' claims are due to Struck by or Against.
- Over 17% of 'Manual Handlers' claims are due to Struck by or Against.

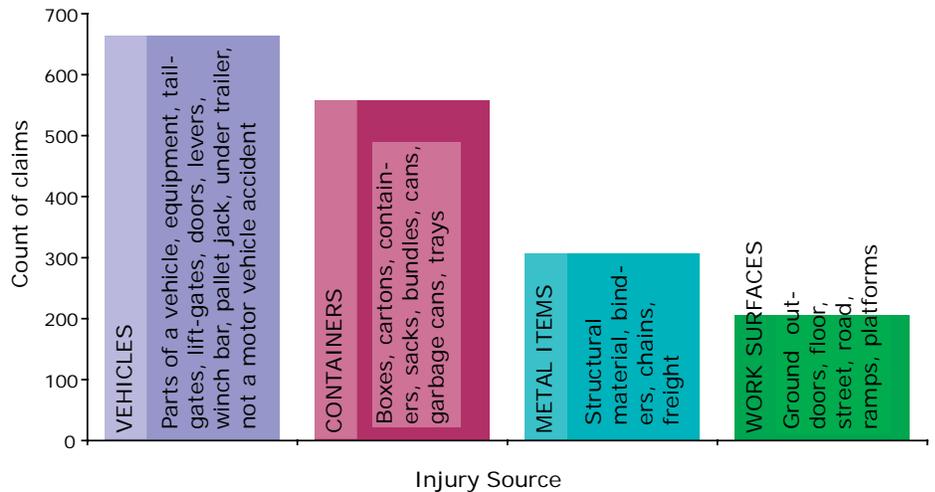
Case Stories:

"Loader operator lifted the trailer before it was hitched, the trailer swung and hit my elbow."

"Opening doors of container; particle board fell out of truck and landed on left foot."

"While attaching loaded trailer to his truck apparently rolled back over him."

Common Source of Injury for Struck by or Against



The most common Struck By claims are back sprains resulting from being struck by boxes or cartons

TRUCKING INDUSTRY



Vehicle-Related Injuries

For the 48,000 workers in the trucking industry, Vehicle-Related account for

- 160 lost work time claims per year.
- Over 7% of all lost work time claims.
- 360,000 lost workdays - that's equivalent to 160 employees not working each year.

On average 1 out of every 200 trucking industry employees will have a Vehicle-Related claim that results in lost work time.

The total workers' compensation cost for Vehicle-Related claims over the nine year period is \$68 million or the cost of

- 715 eighteen wheeler trucks.
- Almost 21 million gallons of diesel fuel.

Who is getting injured?

- 9% of all 'Truck Driver' claims are due to Vehicles
- Roughly 2% of 'Manual Handlers' claims are due to Vehicles.

Case stories:

"Unrestrained driver of dump truck involved in rollover MVA."

"Rolled a garbage truck due to brake failure."

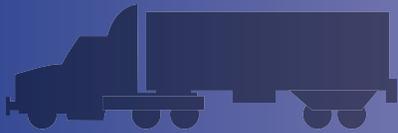
"Load slid inside trailer causing truck to turn over."

"I was driving truck approaching a curve, when traffic ahead suddenly braked, was unable to avoid truck becoming jackknifed."

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1997-2005

The most common Vehicle-Related claims are back sprains resulting from two vehicle collision



GENERAL FREIGHT

General Freight Truck Transportation (NAICS 4841)

This industry group provides general freight trucking truckload (TL) and less than truckload (LTL), to local and long-distance customers.

The NAICS code groups are;

General Local Freight (484110)

Long Distance Freight TL (484121)

General Long Distance Freight LTL (484122)

Of the 2,800 general freight trucking industry accounts included in the study:

- 43% have an accepted claim.
- 37% have a lost work time claim.

Occupational Injuries in the General Freight Truck Transportation Industry (NAICS 4841)

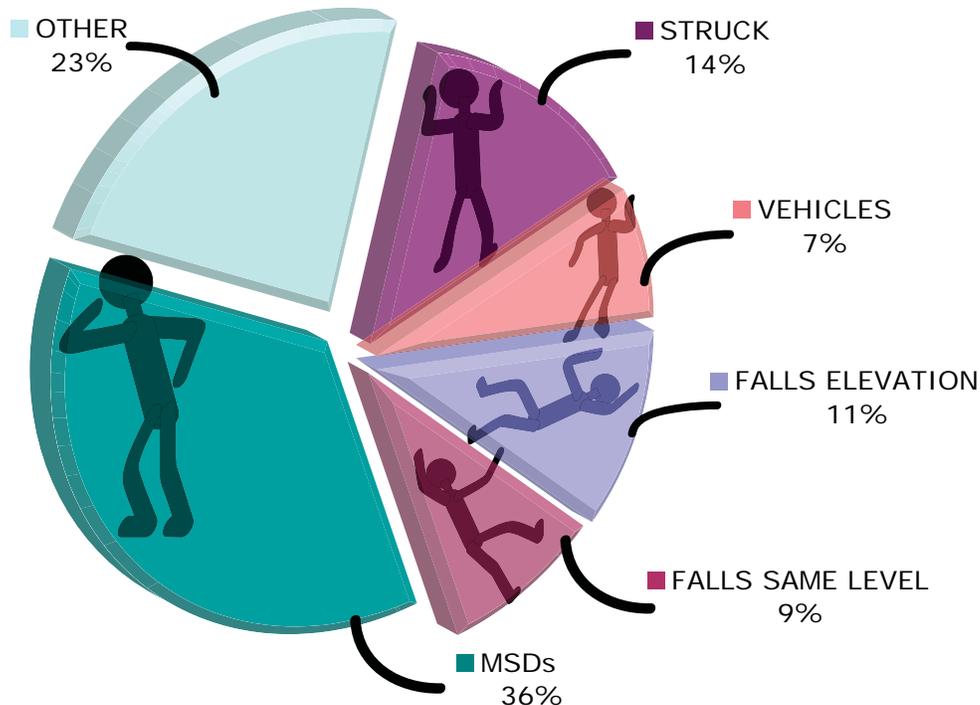
Claim Rates:

The total number of claims for General Freight Trucking Industry employers from 1997 to 2005 is 8,795 or about 980 claims per year.

On average 1 out of 14 full-time employees will have a lost work time claim per year or 7.05 per 100 full-time equivalent employee (FTE).

The most frequent claim type that results in lost work time claims is musculoskeletal disorder (MSDs). The common injury types in the general freight trucking industry are presented below.

Occupational Injuries and Illness in the General Freight Trucking Industry by the Injury Type



GENERAL FREIGHT



Musculoskeletal Disorders (MSDs)

For the 16,000 workers in the general freight trucking industry, MSDs account for

- 350 lost work time claims per year.
- Over 35% of all lost work time claims.
- 640,000 lost workdays - equivalent to 248 employees not working each year.

On average 1 out of every 38 general freight trucking industry employees will have a MSD claim that results in lost work time.

The total workers' compensation cost for MSD claims over the nine year period is \$99 million or the cost of almost

- 1,042 eighteen wheeler trucks.
- About 30 million gallons of diesel fuel.

Who is getting injured?

- 30% of all 'Truck Driver' claims are due to MSDs.
- Almost 35% of all 'Manual Handlers' claims are due to MSDs.

Case stories:

"I was lifting a dolly to hook a set. I pulled the dolly and twisted my back then felt a sharp pain in my lower back. I kept on working and the pain got worse so I reported it to my supervisor."

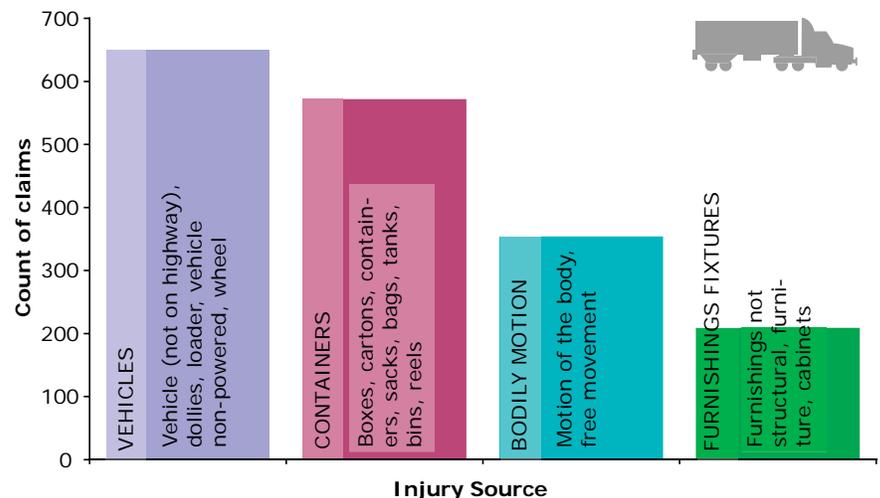
"Pulling pallet weighing 2700 pounds with pallet jack I felt pain in mid-lower back."

"After 11 drops and tarping and untarping 22 times in six days my left hand has become useless, numb, and tingling."

26

1997-2005

Common Sources of Injury for MSDs



The most common MSD claims are back sprains resulting from overexertion picking up a box or container.

GENERAL FREIGHT



Falls From Elevation Injuries

For the 16,000 workers in the general freight trucking industry, Falls from Elevation account for

- 100 lost work time claims per year.
- Over 10% of all lost work time claims.
- 200,000 lost workdays - that's equivalent to 88 employees not working each year.

On average 1 out of every 125 general freight industry employees will have a Fall from Elevation claim that results in lost work time.

The total workers' compensation cost for Falls from Elevation claims over the nine year period is \$34 million or the cost of

- 357 eighteen wheeler trucks
- 10 million gallons of diesel fuel.

Who is getting injured?

- 10% of all 'Truck Driver' claims are due to Falls from Elevation.
- Over 6% of all 'Manual Handlers' claims are due to Falls from Elevation.

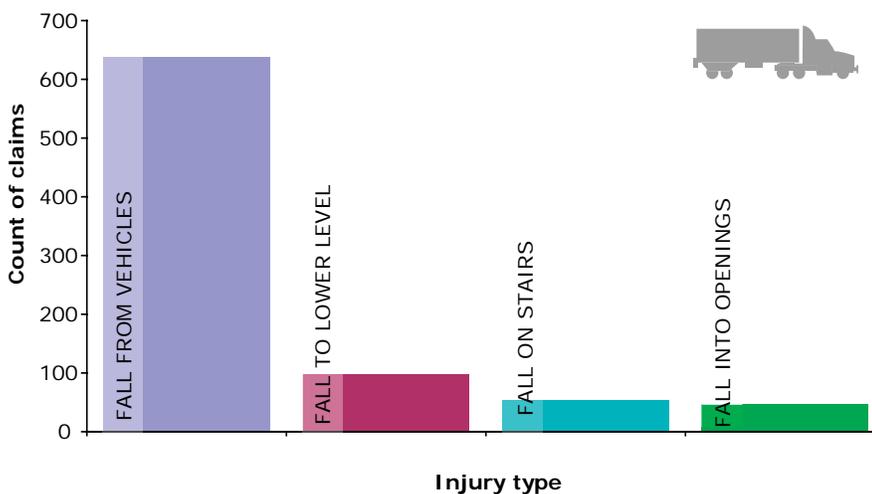
Case stories:

"Fell off my truck between the cab and the trailer."

"Stepped off loading dock knee buckled underneath me and landed on my back."

"Cleaning passenger window slipped off of running boards of my truck."

Common Types of Injury for Falls from Elevation



The most common Falls from Elevation are back & knee sprains resulting from falling out of a vehicle to the ground outside.

GENERAL FREIGHT



Falls on Same Level

For the 16,000 workers in the general freight trucking industry, Falls on Same Level account for

- Over 85 lost work time claims per year.
- About 9% of all lost work time claims.
- 170,000 lost workdays - that's equivalent to 75 employees not working each year.

On average 1 out of every 165 general freight trucking industry employees will have a Fall on Same Level claim that results in lost work time.

The total workers' compensation cost for Fall on Same Level claims over the nine year period is \$25 million or the cost of

- 263 eighteen wheeler trucks.
- About 8 million gallons of diesel fuel.

Who is getting injured?

- 9% of all 'Truck Driver' claims are due to Falls on Same Level
- About 5% of 'Manual Handlers' claims are due to Falls on Same Level.

Case stories:

"I fell over a curb and injured my right arm and right knee."

"While pulling a pin on trailer to slide an axle slipped and fell backwards on left side."

"Fell on ice while opening doors of trailer."

The most common Falls on Same Level claims are back and knee sprains resulting from falling to the ground outdoors or work surface

GENERAL FREIGHT



Struck By or Against Injuries

For the 16,000 workers in the general freight trucking industry, Struck by or Against account for

- 134 lost work time claims per year.
- Over 13% of all lost work time claims.
- 175,000 workdays; that's equivalent to 77 employees not working each year.

On average 1 out of every 100 general freight trucking industry employees will have a Struck by or Against claim that results in lost work time.

The total workers' compensation cost for Struck by or Against claims over the nine year period is \$31 million or the cost of

- 326 eighteen wheeler trucks.
- Almost 9 million gallons of diesel fuel.

Who is getting injured?

- 21% of all 'Truck Driver' claims are due to Struck by or Against.
- Almost 30% of 'Manual Handlers' claims are due to Struck by or Against.

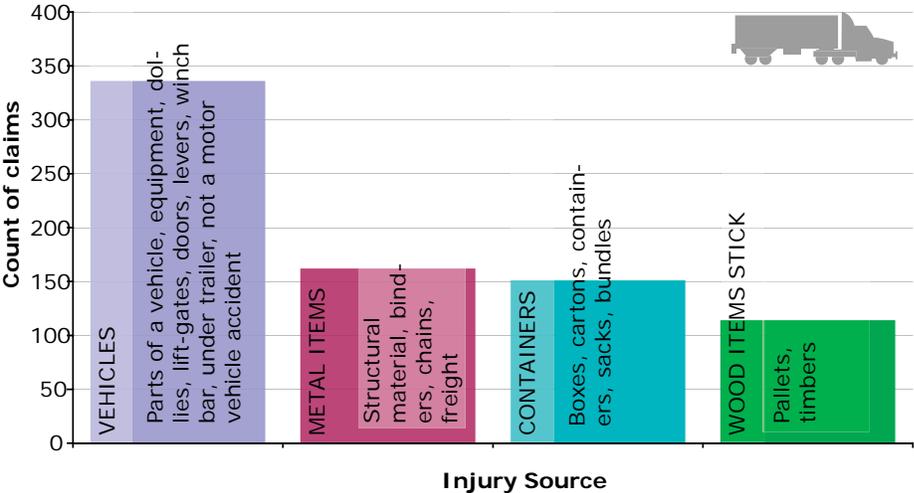
Case stories:

"I was unloading boxes in a trailer and a box fell over and hit me on the head and neck."

"Foot slipped while climbing into trailer and struck leg."

"Open trailer doors and crate fell off and onto my right arm."

Common Source of Injury for Struck by or Against



The most common Struck By claims are multiple injuries resulting from being struck by items on the truck

GENERAL FREIGHT



Vehicle-Related Injuries

For the 16,000 workers in the general freight trucking industry, Vehicle-Related account for

- 70 lost work time claims annually.
- About 7% of all lost work time claims.
- 180,000 lost workdays - that's equivalent to 80 employees not working each year.

On average 1 out of every 200 general freight trucking industry employees will have a Vehicle-Related claim that results in lost work time.

The total workers' compensation cost for Vehicle-Related claims over the nine year period is \$35 million or the cost of

- 368 eighteen wheeler trucks.
- Almost 11 million gallons of diesel fuel.

Who is getting injured?

- 8% of all 'Truck Driver' claims are due to Vehicles
- Roughly 2% of 'Manual Handlers' claims are due to Vehicles.

Case stories:

"Rolled truck due to brake failure."

"Load slid inside trailer causing truck to turn over."

"I was driving truck approaching a curve, when traffic ahead suddenly braked, was unable to avoid truck becoming jackknifed."

30

1997-2005

The most common Vehicle-Related claims are multiple injuries resulting from a two vehicle collision

SPECIALIZED FREIGHT



Specialized Freight Truck Transportation (NAICS 4842)

This industry group provides moving and specialized freight transportation to local and long-distance customers.

Goods Moving (484210)

Specialized Local Freight (484220)

Specialized Long Distance Freight (484230)

Of the 2000 specialized freight trucking industry accounts included in the study:

- 44% had an accepted claim.
- 32% had a lost work time claim.

Occupational Injuries in the Specialized Freight Truck Transportation Industry (NAICS 4842)

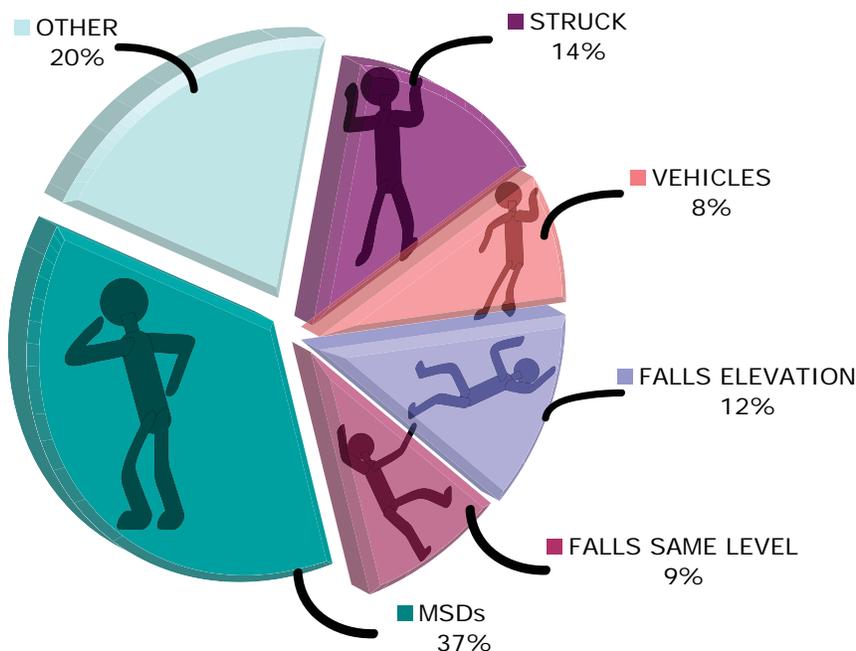
Claim Rates:

The total number of claims for Specialized Freight Trucking Industry employers from 1997 - 2005 is 3,563 or about 400 claims per year.

On average 1 out of 16 full-time employees will have a lost work time claim per year or 6.17 per 100 full-time equivalent employee (FTE).

The most frequent claim type that results in lost work time claims is musculoskeletal disorder (MSDs). The common injury types in the specialized freight trucking industry are presented below.

Occupational Injuries and Illness in the Specialized Freight Trucking Industry by the Injury Type



SPECIALIZED FREIGHT



Musculoskeletal Disorders (MSDs)

For the 7,500 workers in the specialized freight trucking industry, MSDs account for

- 145 lost work time claims per year.
- Over 37% of all lost work time claims.
- 283,000 lost workdays - that's equivalent to 125 employees not working each year.

On average 1 out of every 40 specialized freight trucking industry employees will have a MSD claim that results in lost work time.

The total workers' compensation cost for MSD claims over the nine year period is \$45 million or the cost of almost

- 473 eighteen wheeler trucks.
- About 14 million gallons of diesel fuel.

Who is getting injured?

- 34% of all 'Truck Driver' claims are due to MSDs.
- Almost 34% of all 'Manual Handlers' claims are due to MSDs.

Case stories:

"Lifting a TV to the floor I felt a pain in my back."

"Moving a grand piano, I felt pain in mid lower back."

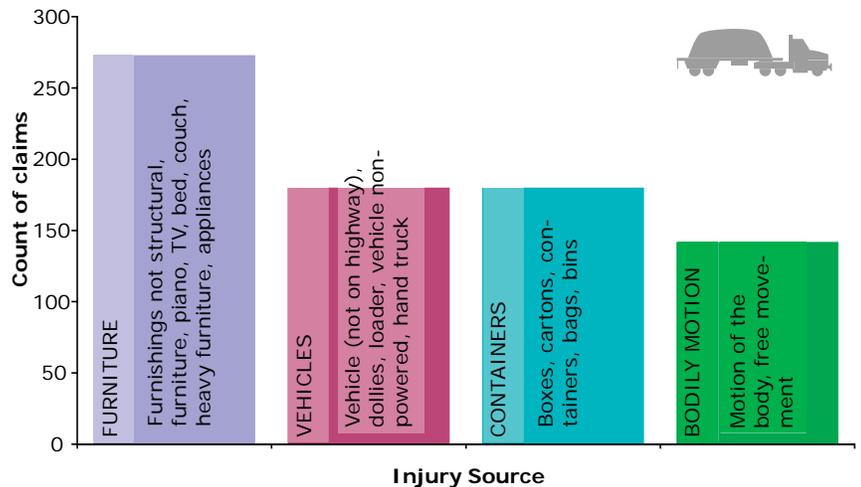
"Many occupation injuries over many years my wrists are rapidly becoming immobile."

32

1997-2005

The most common MSD claims are back sprains resulting from moving furniture

Common Sources of Injury for MSDs



SPECIALIZED FREIGHT



Falls From Elevation Injuries

For the 7,500 workers in the specialized freight trucking industry, Falls from Elevation account for

- 48 lost work time claims per year.
- Over 12% of all lost work time claims.
- 98,000 lost workdays - that's equivalent to 43 employees not working each year.

On average 1 out of every 125 specialized freight trucking freight industry employees will have a Fall from Elevation claim that results in lost work time.

The total workers' compensation cost for Falls from Elevation claims over the nine year period is \$17 million or the cost of

- 178 eighteen wheeler trucks
- Over 5 million gallons of diesel fuel.

Who is getting injured?

- 13% of all 'Truck Driver' claims are due to Falls from Elevation.
- Over 10% of all 'Manual Handlers' claims are due to Falls from Elevation.

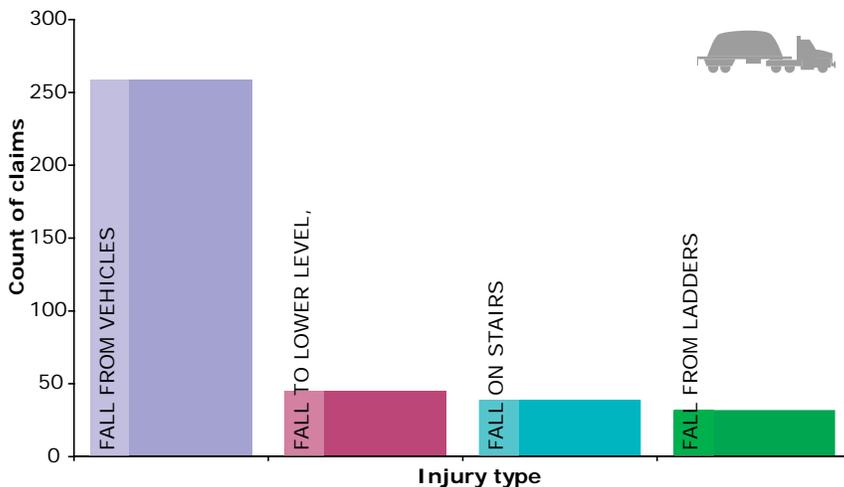
Case stories:

“Stepped off trailer and fell to ground outside.”

“Walk-board fell off truck with me on it, fell to ground.”

“Stepped from ladder on flat bed slipped and fell.”

Common Types of Injury for Falls from Elevation



The most common Falls from Elevation are back & knee sprains resulting from falling from a vehicle or platform.

SPECIALIZED FREIGHT



Falls on Same Level Injuries

For the 7,500 workers in the specialized trucking industry, Falls on Same Level account for

- Over 36 lost work time claims per year.
- About 9% of all lost work time claims.
- 55,000 lost workdays - that's equivalent to 24 employees not working each year.

On average 1 out of every 166 specialized freight trucking industry employees will have a Fall on Same Level claim that results in lost work time.

The total workers' compensation cost for Fall from Same Level over claims the nine year period is \$9 million or the cost of

- 94 eighteen wheeler trucks.
- About 3 million gallons of diesel fuel.

Who is getting injured?

- 10% of all 'Truck Driver' claims are due to Falls on Same Level
- About 7% of 'Manual Handlers' claims are due to Falls on Same Level.

Case stories:

"I slipped on ice and fell to the ground injuring my back."

"I slipped on motor oil and fell to the ground."

"As I lifted a bail of hay I stepped back on loose gravel and fell ."

The most common Falls on Same Level claims are back and shoulder sprains resulting from falling to the ground outdoors or work surface

SPECIALIZED FREIGHT



Struck By or Against Injuries

For the 7,500 workers in the specialized freight trucking industry, Struck by or Against account for

- 54 lost work time claims per year.
- Over 14% of all lost work time claims.
- 68,000 lost workdays - that's equivalent to 30 employees not working each year.

On average 1 out of every 125 specialized freight trucking industry employees will have a Struck by or Against claim that results in lost work time.

The total workers' compensation cost for Struck by or Against claims over the nine year period is \$13 million or the cost of

- 136 eighteen wheeler trucks.
- Almost 4 million gallons of diesel fuel.

Who is getting injured?

- 12% of all 'Truck Driver' claims are due to Struck by or Against.
- Almost 17% of 'Manual Handlers' claims are due to Struck by or Against.

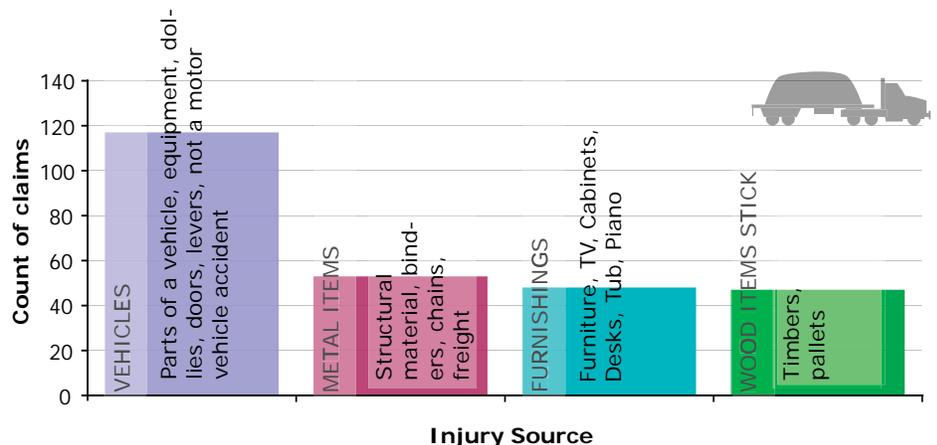
Case stories:

"Wall board fell and crushed finger."

"Tightening ratchet and slipped and hit hand and elbow."

"Carrying sofa it fell and smashed foot."

Common Source of Injury for Struck by or Against



The most common Struck By claims are fingers and feet, cut and bruise injuries resulting from being struck by items on the truck or forklift

SPECIALIZED FREIGHT



Vehicle-Related Injuries

For the 7,500 workers in the specialized freight trucking industry, Vehicle-Related account for

- 33 lost work time claims annually.
- 8% of all lost work time claims.
- 88,000 lost workdays - that's equivalent to 39 employees not working each year.

On average 1 out of every 166 specialized freight trucking industry employees will have a Vehicle-Related claim that results in lost work time.

The total workers' compensation cost for Vehicle-Related claims over the nine year period is \$17 million or the cost of

- 178 eighteen wheeler trucks.
- Almost 5 million gallons of diesel fuel.

Who is getting injured?

- 12% of all 'Truck Driver' claims are due to Vehicles
- Roughly 3% of 'Manual Handlers' claims are due to Vehicles.

36

1997-2005

Case stories:

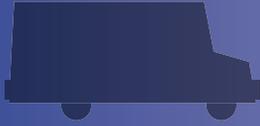
"I was driving my truck a jeep slammed into me causing me to wreck."

"I was involved in an accident that caused my semi to jack-knife. I was thrown around in the cab."

"Load shifted causing truck to roll over."

The most common Vehicle-Related claims are back and neck sprains resulting from a two vehicle collision

COURIER MESSENGERS



Couriers and Messengers Service (NAICS 492)

This industry group provides intercity and or local delivery of parcels.

Couriers (492110)

Local Messengers & Local Delivery (492210)

Of the 580 courier and messenger industry accounts included in the study:

- 37% had an accepted claim.
- 26% had a lost work time claim.

Occupational Injuries in the Couriers and Messengers Service Industry (NAICS 492)

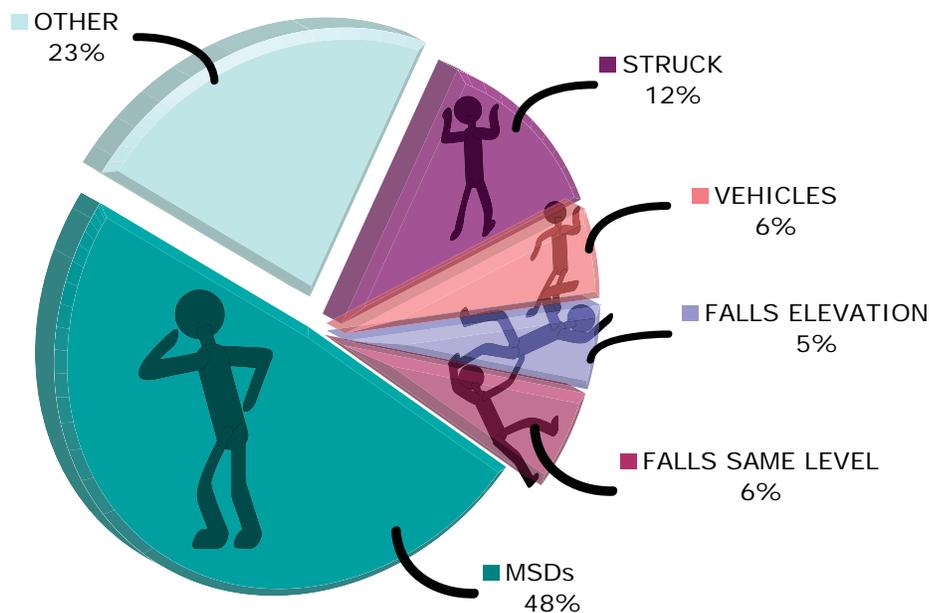
Claim Rates:

The total number of claims for Couriers and Messengers Industry employers from 1997 - 2005 is 6,818 or about 760 claims per year.

On average 1 out of 11 full-time employees will have a lost work time claim per year or 8.5 per 100 full-time equivalent employee (FTE).

The most frequent claim type that results in lost work time claims is MSDs. The common injury types in the courier and messenger industry are presented below.

Occupational Injuries and Illness in the Couriers and Messengers Industry by the Injury Type



COURIER MESSENGERS



Musculoskeletal Disorders (MSDs)

For the 10,000 workers in the couriers and messengers industry, MSDs account for

- 369 lost work time claims per year.
- Over 48% of all lost work time claims.
- 552,000 lost workdays - that's equivalent to 245 employees not working each year.

On average 1 out of every 23 couriers and messengers industry employees will have a MSD claim that results in lost work time.

The total workers' compensation cost for MSD claims over the nine year period is \$64 million or the cost of almost

- 1066 courier vans.
- About 20 million gallons of diesel fuel.

The most common MSD claims are back sprains resulting from moving boxes / crates.

Who is getting injured?

- 48% of all 'Truck Driver' claims are due to MSDs.
- Almost 55% of all 'Manual Handlers' claims are due to MSDs.

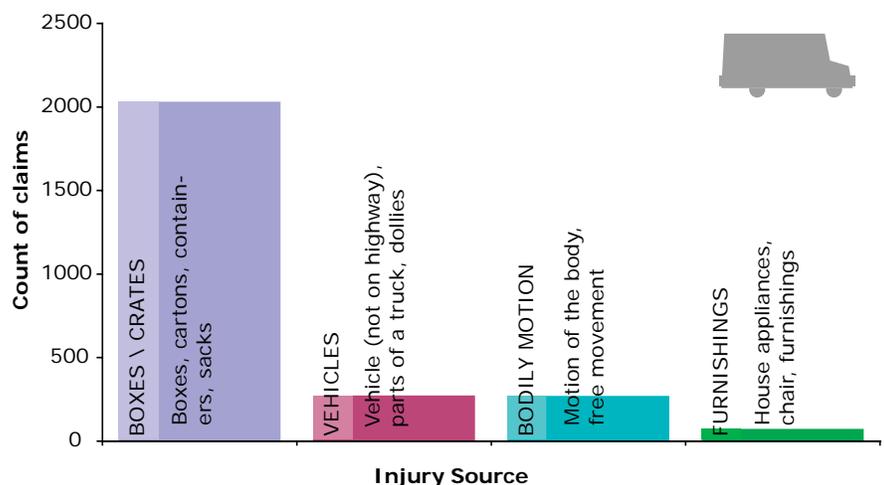
Case stories:

"I was moving freight around in the back of the truck and I pulled something in my lower back."

"While unloading a trailer, I was picking up boxes and putting them on the conveyor I pulled my shoulder."

"I was loading pallets into a cage when the pallet jack got stuck. I tried to free it by pulling and strained my lower back."

Common Sources of Injury for MSDs



COURIER MESSENGERS



Falls From Elevation Injuries

For the 10,000 workers in the couriers and messengers industry, Falls from Elevation account for

- 37 lost work time claims per year.
- Over 5% of all lost work time claims.
- 91,000 lost workdays - that's equivalent to 40 employees not working each year.

On average 1 out of every 250 couriers and messengers industry employees will have a Fall from Elevation claim that results in lost work time.

The total workers' compensation cost for Falls from Elevation claims over the nine year period is \$12 million or the cost of

- 200 courier vans.
- Over 3 million gallons of diesel fuel.

Who is getting injured?

- 13% of all 'Truck Driver' claims are due to Falls from Elevation.
- Over 10% of all 'Manual Handlers' claims are due to Falls from Elevation.

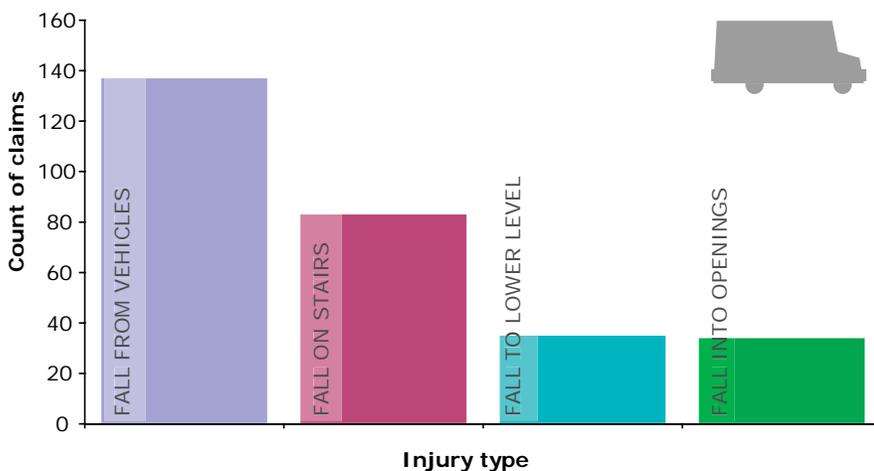
Case stories:

"I lost my balance getting into van and fell to the ground."

"I slipped on wet wooded stairs and fell to the ground."

"Trailer was placed further away from dock than normal. I fell between while picking up packages."

Common Types of Injury for Falls from Elevation



The most common Falls from Elevation are back & knee sprains resulting from falling from stairs or elevated work surface.

COURIER MESSENGERS



Falls on Same Level Injuries

For the 10,000 workers in the couriers and messengers industry, Falls on Same Level account for

- Over 45 lost work time claims per year.
- About 6% of all lost work time claims.
- 99,000 lost workdays - that's equivalent to 44 employees not working each year.

On average 1 out of every 200 couriers and messengers industry employees will have a Fall on Same Level claim that results in lost work time.

The total workers' compensation cost for Fall from Same Level over claims the nine year period is \$13 million or the cost of

- 216 courier vans.
- About 4 million gallons of diesel fuel.

Who is getting injured?

- 7% of all 'Truck Driver' claims are due to Falls from Same Level
- About 5% of 'Manual Handlers' claims are due to Falls from Same Level.

Case stories:

"Lost balance while walking up ramp outside and fell to the ground."

"Walking to customers house slipped and fell on ice."

"While helping with large and overweight package tripped and fell backwards."

The most common Falls from Same Level claims are back and ankle sprains resulting from falling to the ground outdoors

COURIER MESSENGERS



Struck By or Against Injuries

For the 10,000 workers in the couriers and messengers industry Struck by or Against account for

- 91 lost work time claims per year.
- Over 12% of all lost work time claims.
- 96,000 lost workdays - that's equivalent to 42 employees not working each year.

On average 1 out of every 100 couriers and messengers industry employees will have a Struck by or Against claim that results in lost work time.

The total workers' compensation cost for Struck by or Against claims over the nine year period is \$9 million or the cost of

- 150 courier vans.
- Almost 3 million gallons of diesel fuel.

Who is getting injured?

- 10% of all 'Truck Driver' claims are due to Struck by or Against.
- Almost 17% of 'Manual Handlers' claims are due to Struck by or Against.

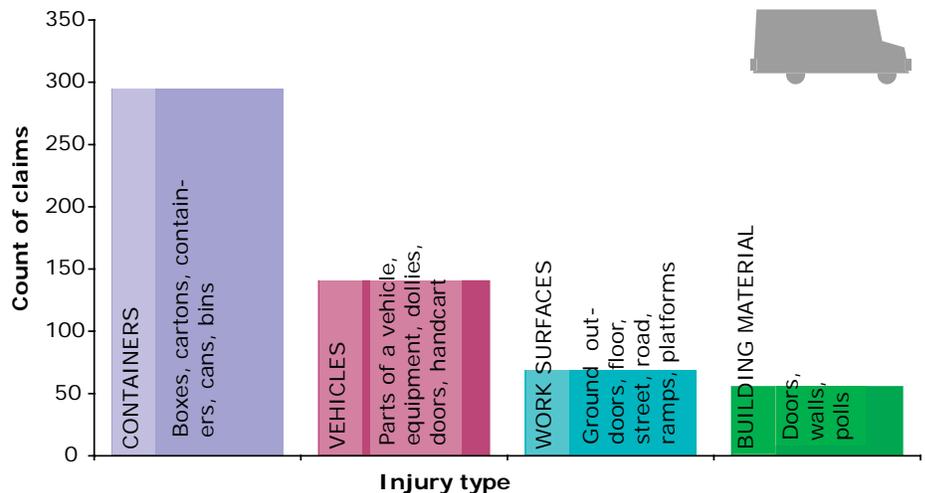
Case stories:

"I was stepping between packages and I rolled my ankle."

"While attempting to place a 150 lb. package I fell on my foot."

"Walking up to forklift driver and my foot was ran over."

Common Source of Injury for Struck by or Against



The most common Struck By claims are back and knee injuries resulting from being struck by a box or carton.

COURIER MESSENGERS



Vehicle-Related Injuries

For the 10,000 workers in the couriers and messengers industry, Vehicle-Related account for

- 41 lost work time claims annually.
- 6% of all lost work time claims.
- 48,000 lost workdays - that's equivalent to 21 employees not working each year.

On average 1 out of every 200 couriers and messengers industry employees will have a Vehicle-Related claim that results in lost work time.

The total workers' compensation cost for Vehicle-Related claims over the nine year period is \$7 million or the cost of

- 116 courier vans.
- Almost 2 million gallons of diesel fuel.

Who is getting injured?

- 8% of all 'Truck Driver' claims are due to Vehicles
- Roughly 1% of 'Manual Handlers' claims are due to Vehicles.

Case stories:

"I was in a 3 car accident I was in the middle."

"Was waiting at stop light and was struck from behind by a car."

"Driver rear-ended a motor-home that had slowed for back up traffic. The driver was killed."

The most common Vehicle-Related claims are back and neck sprains resulting from a two vehicle collision



WASTE MANAGEMENT

Waste Management and Remediation Services (NAICS 5621)

This industry group provides collection and hauling services of waste.

Solid Waste Collection (562111)

Hazardous Waste Collection (562112)

Other Waste Collection (562119)

Of the 230 waste management and remediation accounts included in the study:

- 37% had an accepted claim.
- 26% had a lost work time claim.

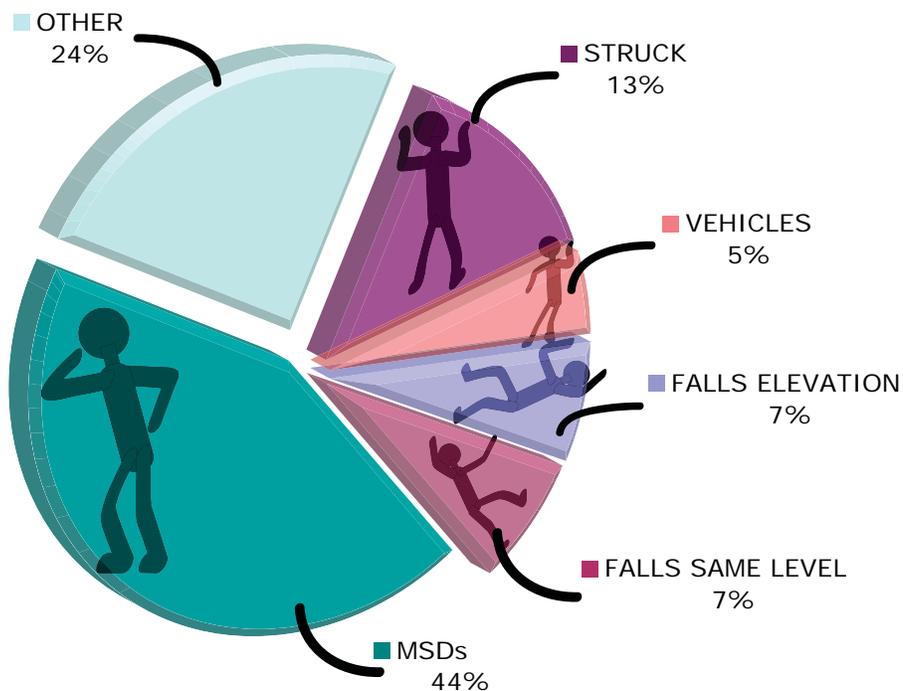
Occupational Injuries in the Waste Management and Remediation Services (NAICS 5621)

The total number of claims for Waste Management and Remediation Services Industry employers from 1997 - 2005 is 2,558 or about 280 claims per year.

On average 1 out of 12 full-time employees will have a lost work time claim annually or 8.2/100 full-time equivalent employee (FTE).

The most frequent claim type that results in lost work time claims is MSDs. The common injury types in the waste management trucking industry are presented below.

Occupational Injuries and Illness in the Waste Management and Remediation Industry by the Injury Type



WASTE MANAGEMENT



Musculoskeletal Disorders (MSDs)

For the 14,000 workers in the waste management industry, MSDs account for

- 1097 lost work time claims per year.
- Over 43% of all lost work time claims.
- 168,000 lost workdays - that's equivalent to 74 employees not working each year.

On average 1 out of every 12 waste management industry employees will have a MSD claim that results in lost work time.

The total workers' compensation cost for MSD claims over the nine year period is \$25 million or the cost of almost

- 166 garbage trucks.
- About 7.8 million gallons of diesel fuel.

Who is getting injured?

- 45% of all 'Truck Driver' claims are due to MSDs.
- Almost 36% of all 'Manual Handlers' claims are due to MSDs.

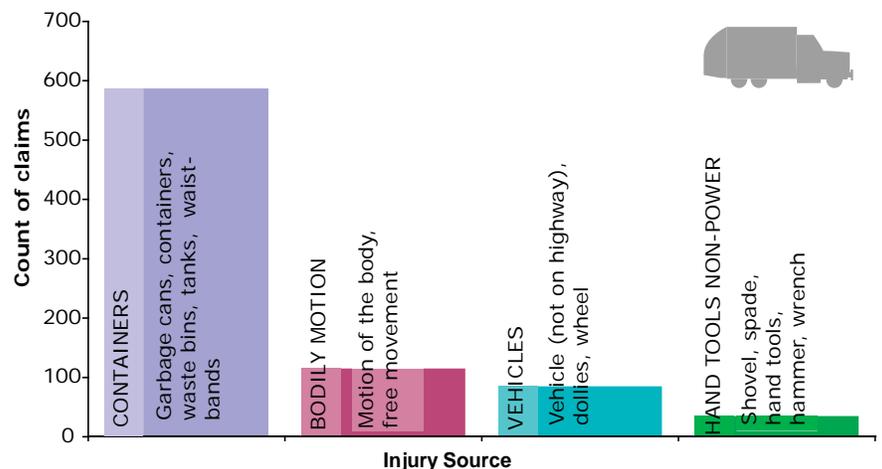
Case stories:

"Lifting heavy garbage can into truck I strained my back."

"Pushing large recycling bins I pulled my shoulder."

"Felt lower back pain while lifting yard waste bin."

Common Sources of Injury for MSDs



The most common MSD claims are back sprains resulting from lifting garbage cans.



Falls From Elevation

WASTE MANAGEMENT

For the 14,000 workers in the waste management industry, Falls from Elevation account for

- 19 lost work time claims per year.
- Over 7% of all lost work time claims.
- 21,000 lost workdays - that's equivalent to 9 employees not working each year.

On average 1 out of every 166 waste management industry employees will have a Fall from Elevation claim that results in lost work time.

The total workers' compensation cost for Falls from Elevation claims over the nine year period is \$3 million or the cost of

- 20 garbage trucks.
- Over 1 million gallons of diesel fuel.

Who is getting injured?

- 7% of all 'Truck Driver' claims are due to Falls from Elevation.
- Over 8% of all 'Manual Handlers' claims are due to Falls from Elevation.

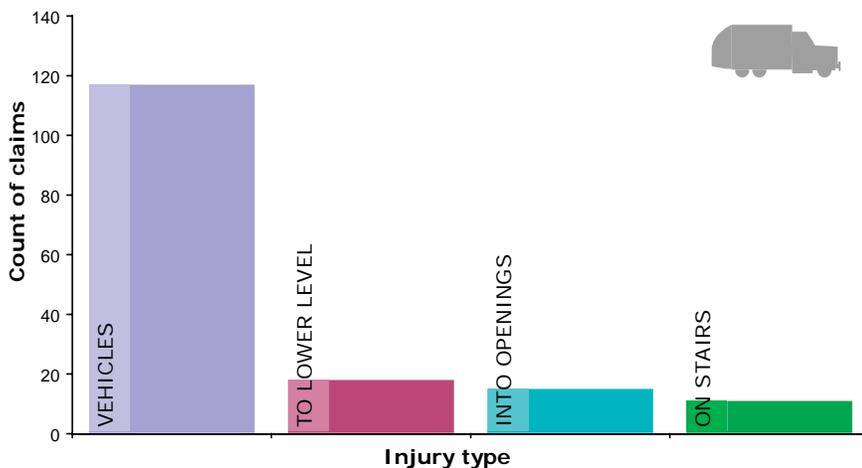
Case stories:

"I was climbing out of the mix compartment and fell to the ground."

"Lost footing and fell off back of truck. I injured my shoulder."

"Jumping out of truck onto a rock and twisted my ankle."

Common Types of Injury for Falls from Elevation



The most common Falls from Elevation are ankle sprains resulting from falling from a vehicle, ladder or opening to the ground outside.

WASTE MANAGEMENT



Falls on Same Level

For the 14,000 workers in the waste management industry, Falls on Same Level account for

- Over 20 lost work time claims per year.
- About 7% of all lost work time claims.
- 22,000 lost workdays - that's equivalent to 9 employees not working each year.

On average 1 out of every 166 waste management industry employees will have a Fall on Same Level claim that results in lost work time.

The total workers' compensation cost for Fall from Same Level claims over the nine year period is \$3 million or the cost of

- 20 garbage trucks.
- About 1 million gallons of diesel fuel.

Who is getting injured?

- 7% of all 'Truck Driver' claims are due to Falls on Same Level
- About 9% of 'Manual Handlers' claims are due to Falls on Same Level.

Case stories:

"While preparing to dump my load I fell on a metal pipe on the ground."

"I was loading yard waste into the truck and turned and slipped."

"Walking forward with a trash can I didn't see the rock and tripped over it."

The most common Falls from Same Level claims are back sprains and knee bruises resulting from falling to the ground outdoors

WASTE MANAGEMENT



Struck By or Against Injuries

For the 14,000 workers in the waste management industry, Struck by or Against account for

- 37 lost work time claims per year.
- Over 13% of all lost work time claims.
- 28,000 lost workdays - that's equivalent to 12 employees not working each year.

On average 1 out of every 90 waste management industry employees will have a Struck by or Against claim that results in lost work time.

The total workers' compensation cost for Struck by or Against claims over the nine year period is \$5 million or the cost of

- 33 garbage trucks.
- Almost 1.5 million gallons of diesel fuel.

Who is getting injured?

- 12% of all 'Truck Driver' claims are due to Struck by or Against.
- Almost 23% of 'Manual Handlers' claims are due to Struck by or Against.

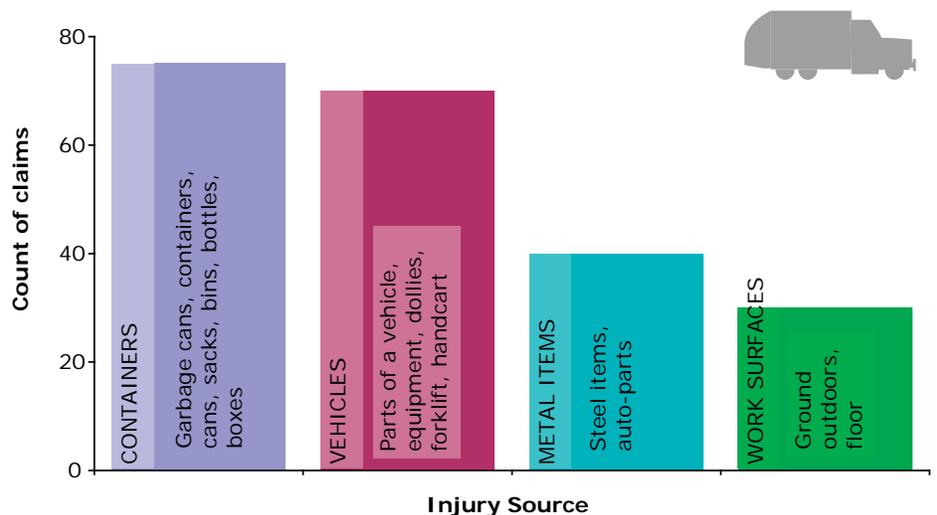
Case stories:

"While throwing a 20 pound bin into the truck I hit my elbow on the edge of the truck."

"Dumpster crushed finger against truck."

"My right foot was run over by a container."

Common Source of Injury for Struck by or Against



The most common Struck By claims are finger fractures and foot bruises from being struck by falling containers or parts of the garbage truck.

WASTE MANAGEMENT



Vehicle-Related Injuries

For the 14,000 workers in the waste management industry Vehicle-Related account for

- 14 lost work time claims annually.
- 5% of all lost work time claims.
- 27,000 lost workdays - that's equivalent to 12 employees not working each year.

On average 1 out of every 250 waste management industry employees will have a Vehicle-Related claim that results in lost work time.

The total workers' compensation cost for Vehicle-Related claims over the nine year period is \$5 million or the cost of

- 33 garbage trucks.
- Almost 1.5 million gallons of diesel fuel.

Who is getting injured?

- 6% of all 'Truck Driver' claims are due to Vehicles
- Roughly 1% of 'Manual Handlers' claims are due to Vehicles.

Case stories:

"A truck pulled into my lane and I rear ended him, I was thrown in the cab."

"I was hanging on the back of a garbage truck when it hit a bump and I fell off."

"The garbage truck rolled over on driver's side."

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1997-2005

The most common Vehicle-Related claims are back and neck sprains resulting from a two vehicle collision

SOLUTIONS

SOLUTIONS

Musculoskeletal Disorder (MSD)



- Task
- Hazards
- Solutions

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1997-2005

● Moving containers (boxes, crates, trash, totes) or furniture.

● Manual handling, repetitive lifting, heavy lifting, awkward lifting, hurrying and unbalanced load.

● **Employers** Provide mechanical aids and training to move materials at all work locations. Provide proper lift training to employees. Balance the type of work an employee performs. Communicate with customer, driver and loader to assure optimal loading and unloading.

● **Employees** Evaluate first and then lift a container - size and weight can fool you. Don't carry excessive weight, you can find a better way. Use mechanical aids to lift and move cargo. Be prepared for load shift. Report discomfort and hazards early to your supervisor so they can be dealt with.

● Using or misusing a vehicle or vehicle parts such as a dolly, handcart, pallet jack, truck, trailer, or support equipment.

● Excessive pushing and pulling, overloading work equipment, uneven ground, unbalanced loads.

● **Employers** Make sure all equipment is in proper working order. Identify hazard areas. When buying new vehicles or equipment select designs for worker safety. Keep the work area as clean as possible.

● **Employees** Don't misuse pallet jacks or dollies by over loading them, avoid driving on poor or uneven work surfaces. Use good body position to move handcarts. Don't pull or push with one hand, use two to distribute the impact to your body. Pushing is usually better than pulling.

● Climbing on/off or opening and closing doors or levers on a vehicle such as a trailer, truck cab, or loader.

● No foot holds available, neglecting to use proper hand and foot holds. Different forces required to open and close doors or levers on a vehicle.

● **Employers** Make sure your vehicles have features for employees to climb on if needed. Provide elevation stations to aid in moving around the truck. Make sure equipment is available to reduce dangerous ascents and reduce mechanical force needed to open and close parts of a truck, such as a 5th wheel release extender bar.

● **Employees** Use three points of contact when working on elevated work surfaces. Avoid working at heights when possible. Don't assume a good strong tug will open everything. Use both hands to push or pull levers and doors.

● Manually securing loads with straps, binders or dunnage and tarping loads.

● Straps breaking, throwing heavy straps or chains, lifting heavy dunnage or tarps to elevated positions, winch bars.

● **Employers** Replace straps before they break. Have employees work together to secure loads. Provide tarping stations. Provide storage racks for stored material and equipment.

● **Employees** Use provided safety equipment, faster isn't better or safer. Always evaluate the condition of a strap or binder prior to use. Use good lifting technique and mechanical aids.

Falls from Elevation



- Event
- Hazard
- Solutions

● Falling from the work surface (trailer, loading dock, ramp, walk-board).

● Poor outside ground conditions (loading dock, trailer bed or material), slick stairs or material, poor floor conditions, slippery street, poor ramp conditions.

● **Employers** Keep the work area clean and well lit. Keep employees off elevated surfaces like the trailer. If employees must work at an elevated position, provide platforms with guard rails or fall protection. Provide ladders and training. Train employees how to safely work on elevated surfaces. Maintain equipment such as trailer ladders and cab steps. Provide non-slip surfaces on access points and other walking surfaces.

● **Employees** Don't jump off your trailer. Use ladders and safety equipment when working on elevated work areas like a trailer. Be careful when moving between elevations of a trailer. Falls from any height are dangerous. When you are on an elevated work surface do not back up; always face the direction you want to go to avoid dangerous situations. Report unsafe conditions of equipment, at a terminal, or at a customer site.

● Falling from a vehicle (eighteen wheeler, garbage truck, forklift, dollies, aircraft)

● Poor step conditions, slick surface, clutter, driver awareness.

● **Employers** Provide access stairs or ladders to the cab and trailer. Provide training and reminders to employees not to jump out of their truck cab. Use the 3 point contact rule.

● **Employees** As a truck driver you repeatedly enter and exit your cab - don't jump out of your truck - this puts a great amount of stress and pressure on your joints. Use three points of contact when entering and exiting your truck. Don't stand on your wheel to service your truck. Use a ladder or stool. Clean up spilled fuel on cab steps. Watch for ice.

● Falling from freight (boxes, work or metal stock material, debris, cars).

● Poor walking surface, not meant to be a walking surface, wet walking surface.

● **Employers** Keep employees off the freight. If employees must work on top of the freight, provide foot holds. Provide ladders and training. Train employees how to safely work on elevated surfaces.

● **Employees** Don't jump off the freight. Watch out for straps and banding. Move carefully when walking on an uneven surface. Use tools that extend your reach to move straps and tarps on loads when possible.

SOLUTIONS

Falls on Same Level



- **Event**
- **Hazards**
- **Solutions**

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1997-2005

● Falling on the work surface (ground outdoors, floor, street, loading dock).

● Poor outside ground conditions (not well maintained or bad weather), trip hazards, cluttered work area, poor inside floor conditions, poor footwear, fuel spills.

● **Employers** Keep the work area clean and well lit. Enforce good housekeeping rules. Provide the tools to keep the work area clean. Apply and maintain anti-slip coating on walking surfaces. Cleanup all oil and fuel spills. Keep the terminal yard free from large potholes. Communicate with customers when unsafe conditions are identified at their sites.

● **Employees** Wear proper footwear. Look before you step, the ground conditions can change rapidly. A path that was once clear can become cluttered, obstructed, or slippery. Report unsafe conditions of equipment, at a terminal, or at a customer site to your employer.

● Falling on a vehicle (trailer, truck cab, dolly)

● Treacherous transitions, narrow passages, no foot holds, straps, dollies.

● **Employers** Maintain your equipment. Train employees how to work around cargo. Design/ specify areas to keep open for employees to walk during loading operations. Provide training and reminders to employees on proper truck exiting.

● **Employees** Be careful when exiting your truck. Depending on the type of driving you may exit your truck 5 to 50 times a day. If you are not prepared, exiting a truck can prove to be very dangerous. Watch where you step. Many times a fall on same level injury is the result of avoiding a falling object. If cargo or boxes are stacked too high avoid walking around them. Don't assume a stack of cargo/packages is stable enough to grab or lean on. Report unsafe conditions of equipment to your employer.

● Falling on a container or wood item

● Poorly stacked material, gaps in pallet surface, loosely stacked items, bad weather, poor footwear.

● **Employers** Keep your employees off the top of cargo, freight, boxes, or garbage to avoid uneven surfaces. Find an alternative way to perform dangerous tasks.

● **Employees** Be careful when working on cargo pallets, boxes, and garbage. Uneven surfaces can cause trips and falls. If the weather is bad take extra caution when working outside securing a load. Wear proper footwear.

Struck by or Against



- Event
- Hazards
- Solutions

- Struck by a vehicle (parts of a vehicle, equipment, lift-gates, doors, levers, winch bar, hydraulic arm, under trailer, not a motor vehicle collision.)
- Working on or around a truck, walking on a truck or trailer, changing a tire, protruding doors and bars
- **Employers** Identify and mark all blind corners. Maintain your equipment, mark hazardous areas around the truck and trailer, train employees on how to use equipment properly. Have and enforce speed limits for all terminal yard equipment.
- **Employees** Be careful when exiting, entering or walking on a truck or trailer. Objects that stick out or move can surprise you and cause injury. Don't force it. Use good posture and balance when you tension a strap and binder. If a binder breaks under load make sure your body is not in the path of release. When on site watch out for loading equipment. Report poor conditions to your supervisor.

- Struck by a container (boxes, containers, tanks, bundles, cans, garbage)

- Load shift, opening doors, poor stacks, items sticking out into a walkway, slick surfaces

- **Employers** Provide equipment to secure and store cargo. Train employees on proper stacking technique and maximum height restrictions. Warn of load shift. Replace all binders/straps that are worn.

- **Employees** Be careful when opening up a trailer, items do shift and will fall. When working around high stacks watch out for falling overhead items. Wear proper footwear such as steel toe. Frequently inspect binders and straps. Do not use if worn. Report worn straps to your supervisor.

- Struck by metal items (structural material, binders, parts, fasteners.)

- Tightening loads with binders, load shift, opening doors, poor stacks

- **Employers** Train employees on proper securing methods and load shift. Replace all binders/straps that are worn.

- **Employees** When tightening down binders or chain watch out for slips and breaks. These sudden changes can cause items to fly through the air or you to lose your balance and cause injury.

SOLUTIONS

Vehicle Related



- Event
- Hazards
- Solutions

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1997-2005

● Motor vehicle collision (trucks, garbage trucks, vans, eighteen wheelers).

● Traffic, weather, other drivers, speed, load shift, distraction

● **Employers** Have a safety policy that doesn't allow distracted driving. Have maintenance programs on all trucks. Remind driver to use caution during poor weather conditions. Train drivers in defensive driving.

● **Employees** Reduce speed during poor weather such as fog, heavy rain or snow and ice. Maintain adequate rest. Avoid the use of stimulants. Always wear the provided seat-belt. Anticipate unsafe driving acts of other vehicles. Scan traffic far enough ahead to be able to react safely to approaching situations. Learn how to read traffic patterns and judge deceleration of traffic ahead. Maintain brakes, wipers, turn signals and lights. Avoid text messaging or using other visual communication/display devices while driving. Don't drive beside an eighteen wheeler, air turbulence can cause rigs to collide. When making right hand turns plan ahead, make certain a vehicle is not in danger of being struck. There are many unique hazards in your industry - listen to seasoned drivers and safety professionals, their stories can save lives.

● Motor vehicle overturned (trucks, garbage trucks, vans, eighteen wheelers).

● Weather, other drivers, inattention, speed, load shift, distracted

● **Employers** Have maintenance programs on all trucks, failed equipment contributes to roll overs. Watch the weather, have employees report in if weather conditions become severe. Train drivers in defensive driving.

● **Employees** Assure loads are secure, especially heavy construction equipment or other oversize cargo. Slow down before a corner, don't allow the trailer to push the truck. Notify employer of poor driving conditions as soon as possible. Watch all traffic signs specifying grade or slope. Do not run hills. Maintain brakes, wipers, turn signals and lights.

● Driver fatigue (driving too long without proper rest).

● Pressed for time, behind schedule, bad weather, rushing to haul one more load.

● **Employers** Employees do not perform at their best on minimal sleep. Have a safety policy in place to address this situation. Losing an hour or two on a delivery schedule is better than losing a driver, truck, and load.

● **Employees** You are responsible for your rig - don't drive tired. If you are tired while driving pull over and rest. The amount of damage a truck can cause in a multi-vehicle crash is tremendous.

CLOSING

SUMMARY

We find that the injury rates in the trucking industries are far above the state average for all industries combined. Musculoskeletal Disorders are the most common trucking injury and place the largest burden on the workers' compensation system.

Given the importance of the trucking industry to our economy, an emphasis on preventing work-related injuries needs to be fostered at each trucking company.

Every employer needs to take steps to build a positive safety culture. This begins with a comprehensive safety plan. Employers need to work with employees to make their work environment better and safer. Everyone in the trucking industry needs to identify unsafe conditions and work towards reducing or eliminating the hazards in the work place.

GLOSSARY

Comparison costs	In this report the cost of fuel and different types of trucks are compared to workers' compensation costs. The estimated costs used are; fuel @ \$3.20 per gallon, eighteen wheeler truck \$100,000, courier van \$60,000, garbage truck \$150,000.
Fall from Elevation Injury	A 'Fall from Elevation' worker injury results from falling from an elevated work surface to a lower level.
Fall on the Same Level Injury	A 'Fall on the Same Level' worker injury results from trauma from falling to the work surface on which they are working.
Gross Domestic Product	The total value of all goods and services produced within the US in a year.
Gross State Product	The total value of all goods and services produced within the state in a year.
Lost work time	Claims involve injuries with four or more days of lost work time compensation, total permanent disability, fatality or the worker being kept on salary.
Mechanical aids	A tool or machine that aids a person in completing work.
Medical-only	Claims involve only medical expenses.
Musculoskeletal Disorder	A 'Musculoskeletal Disorder' (MSD) work injury results from non-impact overexertion or bodily reaction that affects nerves, tendons, muscles, or supporting body structure that happens over time.
NAICS	North American Classification System, classification of industries
Safety Policy	A written plan to prevent accidents, illnesses, and injuries on the job.
Struck By or Against an Object Injury	A 'Struck By or Against an Object' worker injury results from impact between an injured person and a source. Either the source or worker can be moving or stationary.
Turnover	The rate at which an employer loses and gains staff.
Vehicle-Related Injury	A 'Vehicle-Related' worker injury results from a collision or non-collision while inside a vehicle.