



nti
NTARC

2017
Major Accident
Investigation Report

Covering major accidents in 2015



Continuous change in the road transport sector throughout Australia necessitates ongoing research to ensure that road safety measures maintain pace with the new generation technology and driver profiles.

Once again, after the usual two year interval, the research centre has revisited the behaviour of the commercial, predominately 'for hire and reward' road fleet, with an evaluation of major truck crash incidents. This report, the seventh (7th) published since 2002, continues the tradition of researching the circumstances involving major truck crash incidents in Australia.

The National Truck Accident Research Centre (NTARC) is an independent research facility established by National Transport Insurance (NTI), which, continues to be the leading commercial vehicle and equipment insurer in Australia.

Acknowledging that you 'cannot expect unless you inspect' we believe that NTARC's commitment to accident research provides an understanding of the root causes of road crashes and can influence the implementation of countermeasures to drive behavioural change.

This 2017 review takes a fresh look at crash incidents reported to NTI in 2015. During that year industry and government agencies continued the evolution of micro-economic reform seeking further uniformity and consistency with road transport law and road regulation. There was a continuing focus on heavy vehicle accreditation, vehicle roadworthiness, mass, dimensions and loading, fatigue management, and consistent on-road enforcement.

As the road freight task continues to expand, opportunities emerge for safer, longer vehicles, with higher productivity, less emissions as well as a continued emphasis on safer workplaces. (BITRE - Freightline 1 - Australian Freight Transport Review)

Given local and global economic influences, we can expect a growth in demand for services, although that may not directly translate to profit growth within the

transport sector. The growth in the task will demand more proficient utilisation of goods carrying vehicles, and an expansion of the improved efficiencies that will impact on the movement of domestic freight. In a nutshell, more freight on fewer, more efficient and safer vehicles.

Whilst fatalities in crashes involving articulated vehicles are flat lining, there is no declining trend for fatalities in heavy rigid truck-involved crashes. We are reminded that there is no room for complacency as the reliance on freight movements by road remains pivotal to Australia's economic stability and growth.

The NTARC biennial report into heavy vehicle crashes is an impartial and valuable resource for road safety reviewers. Whilst the report's focus is limited to NTI losses, it represents both a very large survey and a safety snapshot of the Australian road freight industry. This snapshot is indicative of the industry's performance and general behaviour. The report as always, attempts to be unique, current, unbiased and, hopefully, not open to selective misreporting.

Throughout 2015 NTI's insurance portfolio continued to expand and with such growth the notified claims increased proportionally to over 8,500 incidents. Following the interrogation of the NTI Claims databases, and filtering the major losses over \$50,000, it was established that the NTI Claims Centres throughout Australia managed some 606 major crash incidents which accounted for \$85.4m in settlements and approximately 7.5% of all claims by number.

From the earliest released NTARC studies, the centre has reviewed all supporting information describing crash incidents. The compilation of information gathered by the insurer in such cases is extensive. We report on such criteria as: vehicle configuration, freight carried, driver age and experience, the duration and the characteristic of the journey in question etc. To ensure consistency for comparative purposes, this report will continue to focus on equipment and, where applicable, third party losses with an impact severity of \$50,000 and greater.

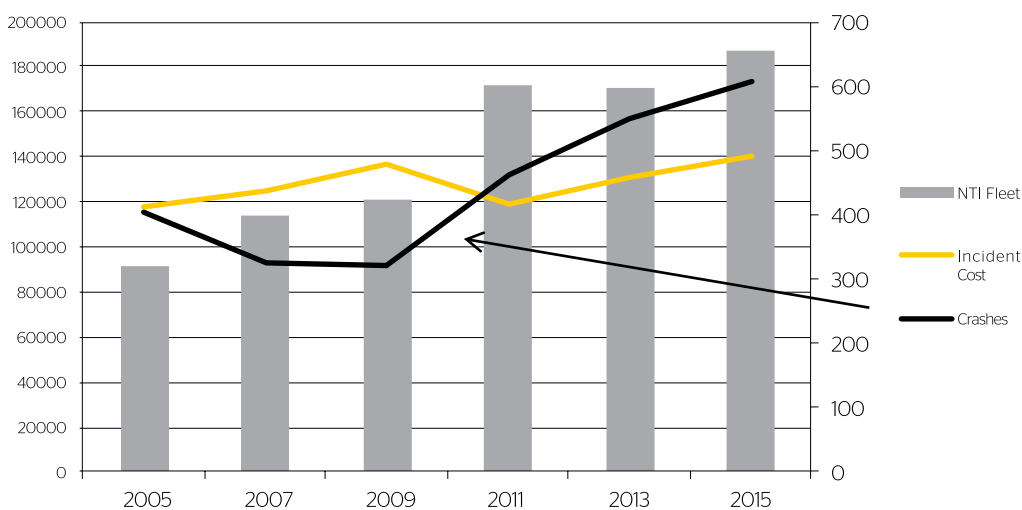
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Introduction and Overview of Findings

During 2015, 606 serious losses satisfied the criteria of a major crash incident for analysis in this research paper. Such losses over \$50,000 do not include off road machinery, farming and earthmoving equipment that under normal circumstances would not operate on the road network or need be registered.

These major crash incidents accounted for \$85.4m in claims payments, some of which were fully recovered from the other parties where they were found to be liable.

NTI Fleet Growth Vs Major Crash Incidence



Since the previous report released in 2015, the number of large losses recorded has increased by 10.3% whilst the NTI portfolio of units insured has increased through organic growth and acquisition. The incident rate remained constant with 3.2 major accidents per '000 units insured. This indicated that there was no worsening in major collisions over the last two years. However, the average cost per major incident claim was \$140,828, which was a 7.8% cost increase.

Summary of Findings

This report is the seventh in the current series that began in 2002 with the issue of the Australian Transport Safety Bureau Annual Review. The report details research undertaken into major truck crash incidents in Australia where National Transport Insurance (NTI) was the insurance underwriter. It reviews heavy vehicle accidents in the 'hire & reward' freight sector where the commercial vehicle's payload exceeds five tonnes.

The report examines serious truck crash incidents where the quantum of the loss exceeds \$50,000.

This study has reviewed 606 truck crash incidents reported to NTI during 2015. The aggregate cost of losses in this study was \$85.4m which includes own, third party vehicle and property damage.

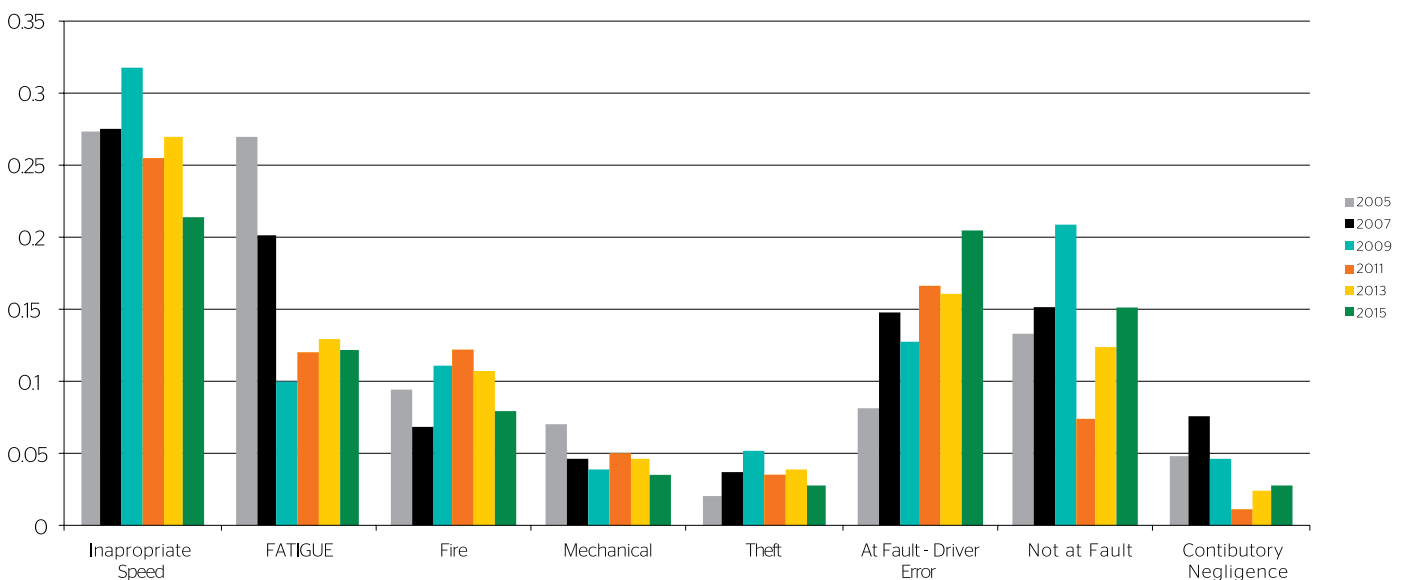
- Inappropriate speed for the prevailing conditions continued to be the predominant cause of major truck crashes, accounting for 21.4% of claims registered. 68.4% of speed losses resulted in rollover.
- 28.9% of major crash incidents involved vehicle rollover whilst on road.
- 82% of major crash incidents attributed to fatigue occurred in the Australian Eastern States.
- Outward journeys ex home port, contributed to two out of three reported large losses.
- 56.1% of major crash incidents occurred between the hours of 0800 and 1700 hours when the on-road population of all vehicles is proportionally highest.
- Single vehicle accidents (SVAs) contributed to 66% of losses with the balance of 34% involving collisions with third party vehicles. In losses with third parties not involving fatal injury, the NTI insured heavy vehicle was liable in 60% of the cases. In collisions involving fatalities however, the truck was not at fault on 93% of occasions.
- The report found that Victoria was the worst performing State when comparing major truck crash incidents to that State's share of the freight task. While the Pacific (NSW), Princes Highway (Victoria) and the Bruce Highway (Queensland) were the worst performing highways. The NSW result deteriorated only marginally.
- Western Australia, following previously poor results, returned the greatest improvement in State statistics, followed by QLD and SA.
- Truck fires continued to account for one in ten large loss incidents with electrical failure accounting for 60% of fires starting in the cabin or engine bay.
- Mechanical failures were inconsequential with a 3.5% crash incident level. (Tyre failure accounted for 52% of losses attributed to mechanical fault.)

Accident Cause: Investigation Finding

Factor 1: Inappropriate Speed

In this study our findings identified that inappropriate speed for the conditions is still the major cause of severe accidents for NTI. In such cases, inappropriate speed is the speed that is not safe within the operating environment and we emphasise that it is not necessarily the truck travelling at high speed or breaking the speed limit.

Accident Cause - Investigation Pending



Whether negotiating a roundabout, cornering or just changing lanes, inappropriate speed accounted for

21.4%

of losses during 2015 whereas in the previous study into 2013 losses it was

27%.

Factor 2: Fatigue

Fatigue still remains an issue of concern. The previous report had noted that since the September 2008 introduction of new legislation for heavy vehicle driving hours, and consequent fatigue reform, we had seen considerable improvement in losses related to operator fatigue. With this current finding of 12.2% we have seen neither an improvement nor deterioration in the fatigue result since the last report. The question is: With this result and similar findings since 2009, are we prepared to tolerate this outcome as the new acceptable standard for fatigue related major accidents?

We are cognisant of the fact that if the driver does retire for rest and does not experience quality sleep, even a short period of driving can be affected by fatigue.

It also raises questions of the effectiveness placed on a prescriptive driver hour's manual or electronic log books, when compared to the real benefits of astute driver management, fatigue training and regular driver health monitoring, which also encompasses sleep disorders.

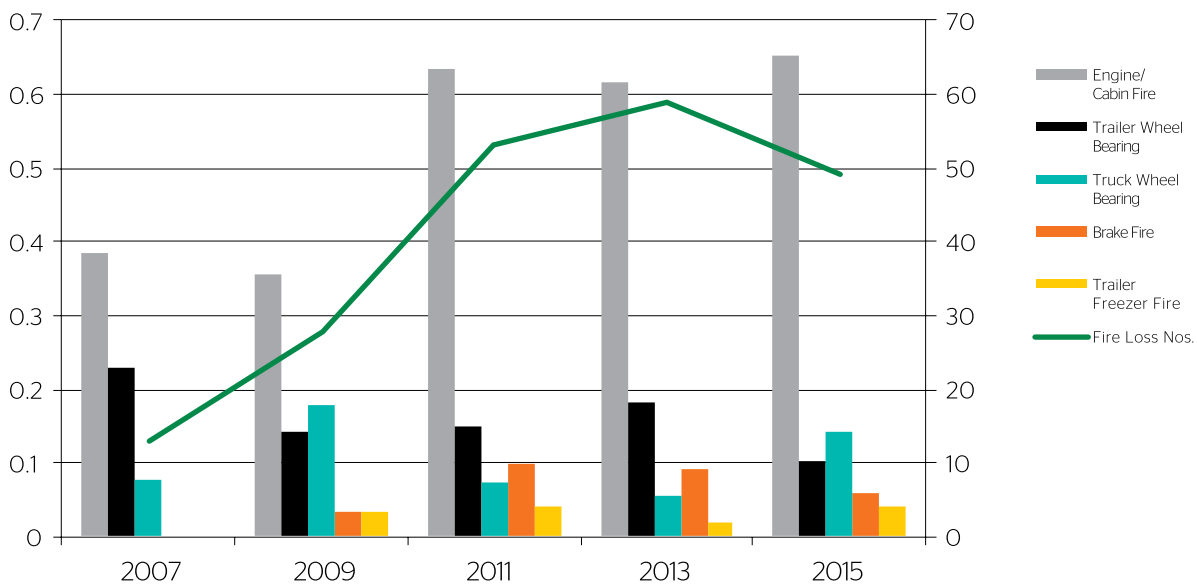
Fatigue and its impact on serious truck crash incidents is addressed in detail later in this report.

Accident Specifics: Loss by Fire

Factor 3: Non-Impact Fires

These are the fire related equipment losses which were not resultant from an impact to the operating vehicle. In past accident research studies NTARC, devoted substantial resources to the further investigation of truck fires and this was for good reason as the frequency of truck and ancillary equipment fires could no longer be ignored.

Loss by Fire





Reported losses during 2015 show that over 9% of major losses were again attributable to fire. This result was a marginal improvement on the previous study, however fires still accounted for one in ten large losses. In 65% of those losses, the source of ignition energy was found to have been restricted to the truck cabin or engine bay area and, within such losses where ignition was suppressed to the cabin or engine bay, over 60% were attributed to electrical failure.

Otherwise, we continue to identify that the remainder of fires originate from mechanical failure of truck or trailer wheel bearings, brakes, tyres and electrical wiring specific to trailer cooling units.

Accident Specifics: Vehicle Maintenance and Driver Error

Factor 4: Vehicle Maintenance

Vehicle maintenance and the mechanical condition of a fleet have been given unrelenting attention since the 2013 Mona Vale NSW fuel tanker incident. Whilst investigative findings found driver error in that case, transport authorities continue their focus on the roadworthy condition of the fleet.

In this report, NTARC researchers established that 3.5% of major loss claims were attributable to those matters deemed to be mechanically related. Furthermore, in over 52% of these reports, tyre failure was the primary cause.



Factor 5: Driver Error

This category is labelled because it is not covered by any other specific causal reason. Over 65% of these third party incidents involve collisions with other parties and generally occur on the road network within a built-up metropolitan or urban area.

Single vehicle incidents (SVA's) accounted for

66%

of claims registered and again dominated the large incidents statistics. Of the remainder, in non fatal incidents, where another vehicle was involved, the study found the NTI insured vehicle to be liable in

60%

of the cases

Accident Specifics: Multiple Vehicle Accidents

There were many disturbing multi vehicle fatal incidents investigated in this report that involved third party car and light vehicle drivers, some with passengers. Given our records are specific to the accident scene, and the time immediately following the incident, there may well have been further fatalities during and following the emergency evacuation and transportation of those seriously injured. Of these fatal accidents, the driver of the car or light vehicle was found to be totally responsible in 93% of the incidents. If this finding is consistent with national data, there is perhaps a role for agencies and media, when quoting road toll statistics for 'fatalities involving heavy vehicles', to incorporate an 'at fault' statistic, otherwise the perception will always be that the truck was at fault.

Passenger and light vehicle interaction with heavy vehicles needs a renewed focus by Federal, State and Territory road safety regulators.

Short of mandating driver education programs for new and existing licence holders and an emphasis on sharing the road with heavy vehicles, our deeper concern extends to driver attitude and general behaviour. Indifference, preoccupation and lack of respect for the road rules also breeds complacency which leads to multiple traffic violations and increased road incidents. This along with driving at speed, irrespective of the conditions and the use of mobile telephones, particularly texting whilst driving, has now reached an epidemic level. There are fundamental social issues that now need to be addressed or the road safety

gains introduced in the past generation will be lost. (CARRS-Q State of the Road report.)

For NTI major incidents that occurred in 2015, in the category of fatal collisions involving third party drivers that were found to be totally responsible, 80% occurred on the highway network with 36% being female drivers. Tragically 63% of female drivers involved in these fatal incidents were 21 years or younger. In all fatal losses involving female third party drivers, the average age was 32 years 1 month.

Fatalities involving male drivers accounted for the balance with 67% of losses with fatalities. Male drivers under the age of 21 years represented 5.2% whilst 37% were aged over 50. The average age was 39 years 9 months.

Overall, 40% of losses occurred between the hours of 12pm and 6 pm whilst third party drivers over 70 years accounted for 20% of these collisions with heavy vehicles.

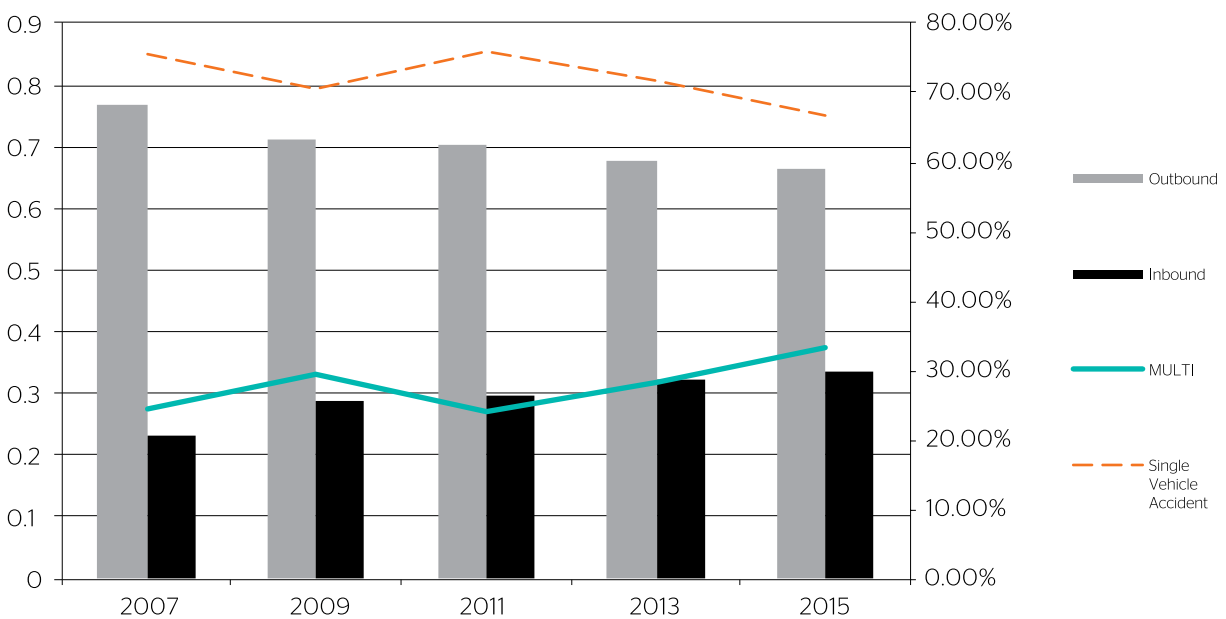
Again and assimilating the above findings from fatal crashes reported to NTI in 2015, this result does raise the issue that for young and or inexperienced licence holders' driver training and skills evaluation does not adequately cover highway applications where road speed and driving to the conditions is also a critical competency.

Accident Specifics: Direction of Travel

The chart below includes the direction of travel to highlight the degree of influence of such matters as driver's fitness for duty and trip preparation in the context of loading and vehicle readiness. NTI's data showed that two out of every three losses occur on the outbound journey from home base. In cases where inappropriate speed was the finding (21.5%), 49.4% occurred on Mondays or Tuesdays, whereas where fatigue was found (12.6%), most incidents were on Mondays with that day and Tuesday accounting for 41.1% of major incidents.

NTARC has established that most single vehicle incidents occurred on the outward leg and found that 11.35% of return trip losses were fatigue influenced.

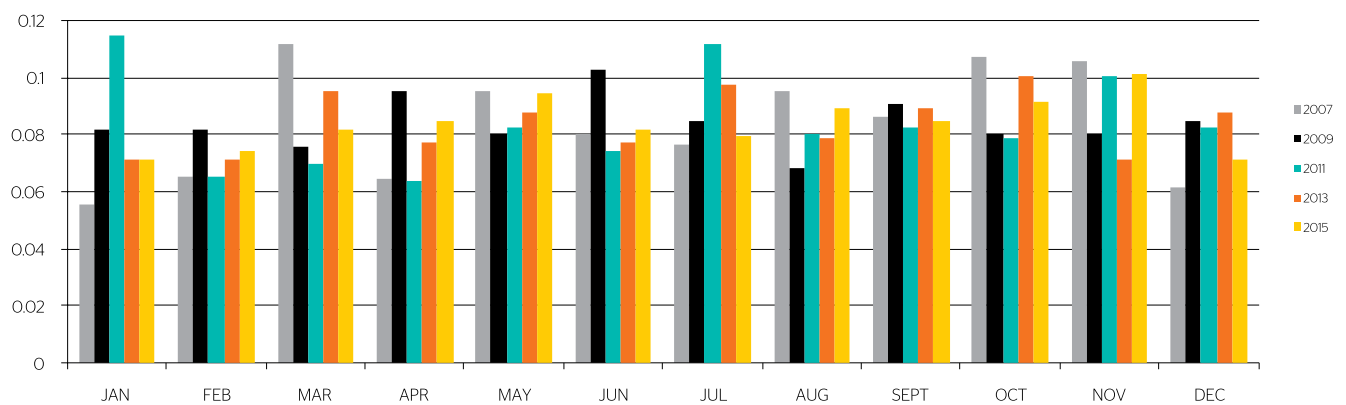
Direction of Travel



Accident Specifics: Month

With 10% of serious incidents, November 2015 was noted as the worst month in this study. The results for May, August and October were also prominent.

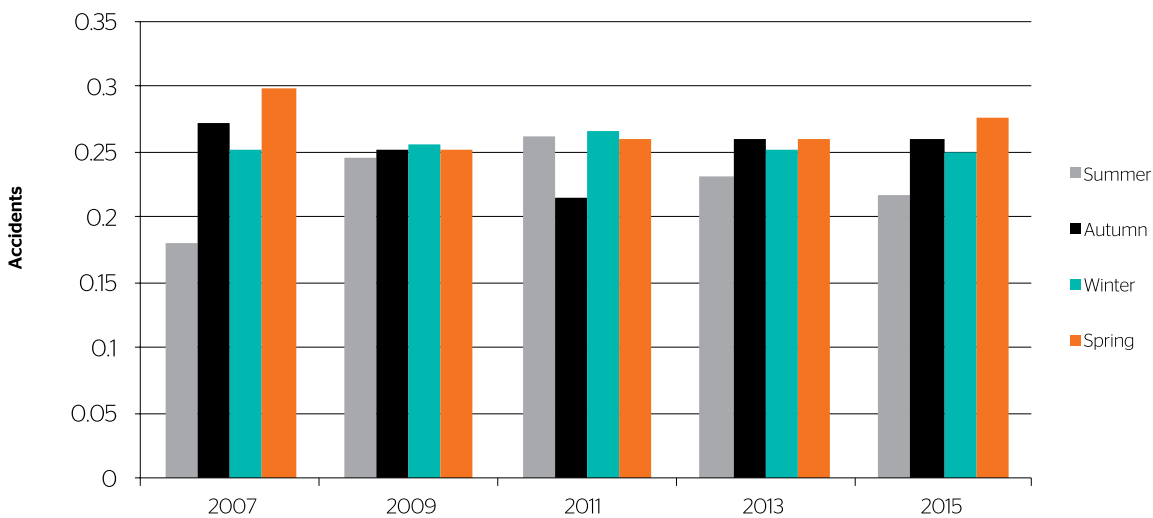
Accidents by month



Accident Specifics: Season

As in the 2015 report, apart from a marginal increase in losses for autumn and spring, there was no particular season identified that exhibited any greater accident concerns. Conversely, across most studies (NTARC) summer is generally the lowest accident season.

Accidents by Season

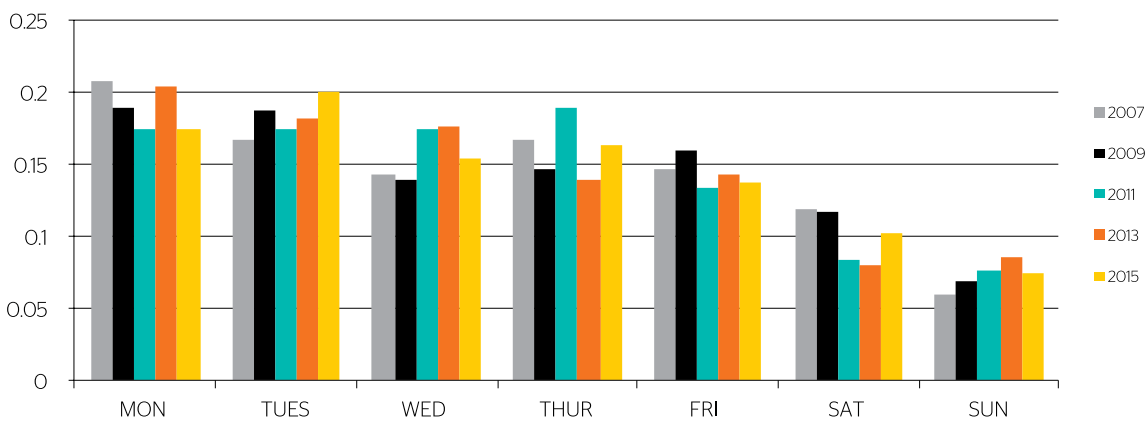


Accident Specifics: Day of Week

When examining day of the week information, current results have again been consistent with the findings in past reports; Monday to Wednesday continue to account for the majority of losses with 52.5% of incidents. Tuesday is the worst day in this study in contrast to previous reports where Monday was

usually the poorest performer. It is worth noting though that for some freight sectors the later weekdays reflects higher activity. This is the case with livestock movements that are responsible for the accident spike seen on Saturdays.

Accidents by Day of Week

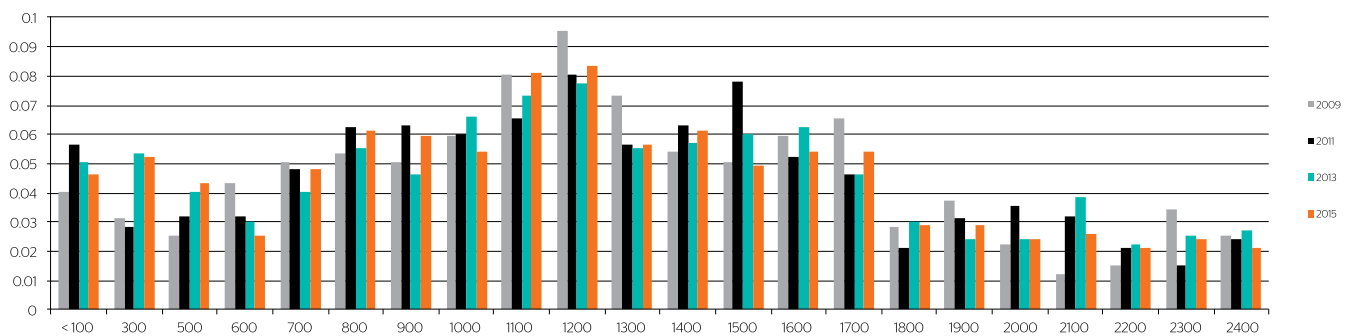


Accident Specifics: Time of Day

Information provided from reported claims with regard to the accident time indicated an increase in losses between 7am and 10am. Otherwise, investigations consistently found higher incident rates from 11am

though to 2pm. The highest incidence of losses usually represents those times during the day when transport traffic is at its heaviest.

Accidents by Time of Day



Accident Specifics: Accident Location; State / Freight Task

The State by State analysis of the major loss incidents continues to highlight some emerging trends across combined national freight movements (ABS 9223.0). In the 2015 study, based on 2013 data, it was stressed that Queensland and Western Australia were overrepresented in large incidents when likened to their share of the freight task. We commented in that report that this could in fact be attributed to the growth in the task servicing mining communities, usually in remote areas. Given the downturn and less reliance on supplying to the resource sector in these States (www.dtf.vic.gov.au/files/82a5c8da-fbba-4d02-95b5), the incidence of major losses has reduced, particularly in WA.

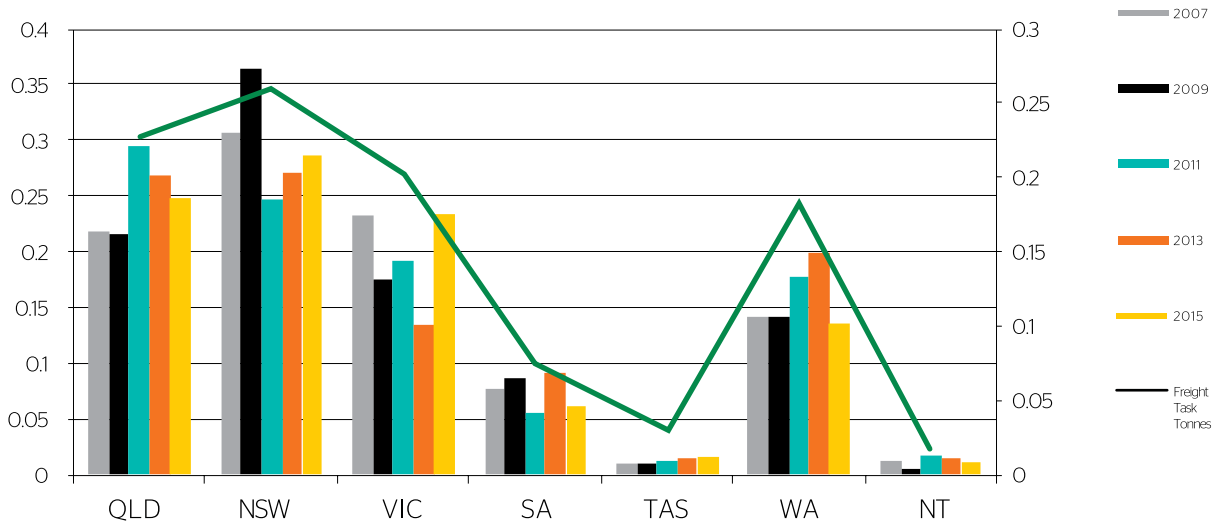
In NSW, however, we note an increase in the incidence of large losses accounting for 28.7% of the national outcome. Irrespective of the fact that there is some

contention as to that State's 25.9% freight share, we believe NSW was overrepresented in major truck collisions. Admittedly a proportion of road freight does move through NSW which neither originates nor ultimately terminates in that State. In the NSW losses, 21% of the incidents were for freight originating out of State.

With 23% of losses against a freight share of 20%, Victoria's previously good results were not sustained. Noticeably, 32% of losses involved rigid vehicles, usually with trailers.

The results identified an improvement with the QLD and SA result and also, from NTI's perspective, the Tasmanian and Northern Territory results remain at an acceptable expected equipment loss rate.

Accident Location State / Freight Task



Accident Specifics: Incident Scene on the Road Network

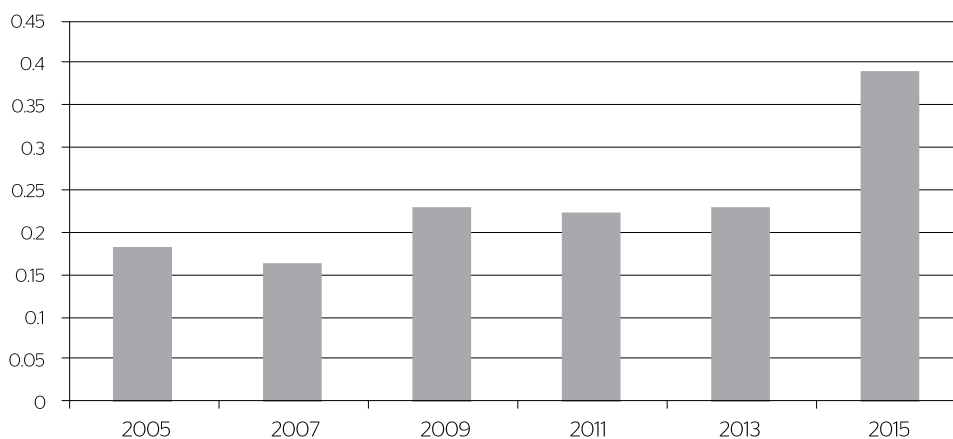
Most heavy vehicle major losses occurred on our highways, which consist of regional, remote and coastal highways. Australia's major coastal highways combine to make Highway 1 which links the capital cities of each state and other major cities and towns. At a total length of approximately 14,500 km (9,000 miles) it is the longest national highway in the world with the heavily utilised Pacific, Bruce, Nullabor and Great Northern making up major sections of Highway.

At a total length of approximately

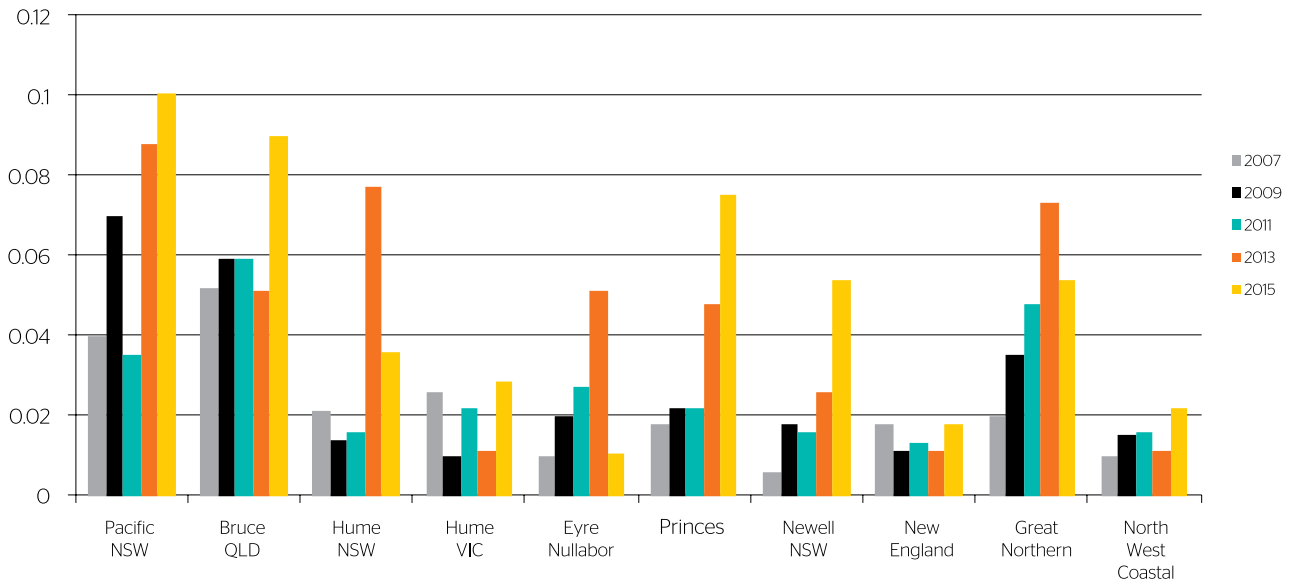
14,500 km

(9,000 miles) it is the longest national highway in the world with the heavily utilised Pacific, Bruce, Nullabor and Great Northern making up major sections of Highway

Incidents on Highway 1



Incidents on Australia's Major Road Networks



In the context of highways, NTI's data showed that major accidents tend to occur on those most heavily used by freight operators. Arguably, the busiest on the network is the Hume.

The Hume Highway is one of Australia's major inter capital highways, running for 850 kilometres (530 miles) between West Sydney and just North of Melbourne. When we review this highway both the Victorian (VIC) and the New South Wales (NSW) sections are examined independently.

The Victorian result, given traffic volumes, remains in line with expectations and we are now witnessing

better results on the NSW section of the network. No doubt the final completion of the four lane, dual carriageway extension has assisted the reduction of truck crash incidents on Highway 31.

The Bruce section of the national highway continues to be the worst performer given its relatively minimal share of freight movements. This highway is a major Queensland section of Highway 1, travelling north from Brisbane along the eastern coast to Cairns.

The Bruce's length is approximately 1700 kilometres (1100 miles). For the most part it is a two-lane road with passing lanes which assist traffic queues and improve traffic flows. The interaction with local and tourist traffic, only compounds the issue of sheer distance with

23.5%

of all losses recorded on Highway 1.

A 1 BRUCE HIGHWAY	
Nambour	103
Maryborough	251
(Bundaberg)	356
(Gladstone)	538
Rockhampton	634
Mackay	968
Townsville	1354
Cairns	1699

The next highway reviewed was Western Australia's Great Northern. The Great Northern links the capital city of Perth with its northernmost port, Wyndham. With a length of almost 3,200 kilometres (2,000 miles), it is the longest individual highway in Australia. Part of this highway is a link of Highway 1 and travels through remote areas of the State, and is the road corridor to Darwin at Australia's northern tip. The 2015 result saw a decline in major losses on the Great Northern. This was possibly due to the reduction of freight traffic servicing the resources sector west of Port Hedland.

With 5.43% of major accidents, the Great Northern Highway had a similar number of losses than those recorded on the Newell (39). Whilst animal strikes, fires and tyre failures accounted for the majority of losses on the Great Northern, the majority of the Newell's losses, which have increased since last reported, were attributed to fatigue.

Increased traffic movements on NSW's Pacific Highway saw large losses increase comparably and now the Pacific Highway represents over 26% of the Highway 1 major crash incidents. Worth noting was the fact that many losses could be attributed to incidents involving third party vehicles where the NTI insured vehicle was found to be blameless.

Similarly, losses reviewed on the Princes Highway sector of the national highway established that the majority of losses involved interaction with other traffic. The Princes Highway is a major road in Australia, extending 1,941kms (1,206 miles) from Sydney to Port Augusta via the coast and through the states of New South Wales, Victoria and South Australia.

Accident Specifics: Road Category

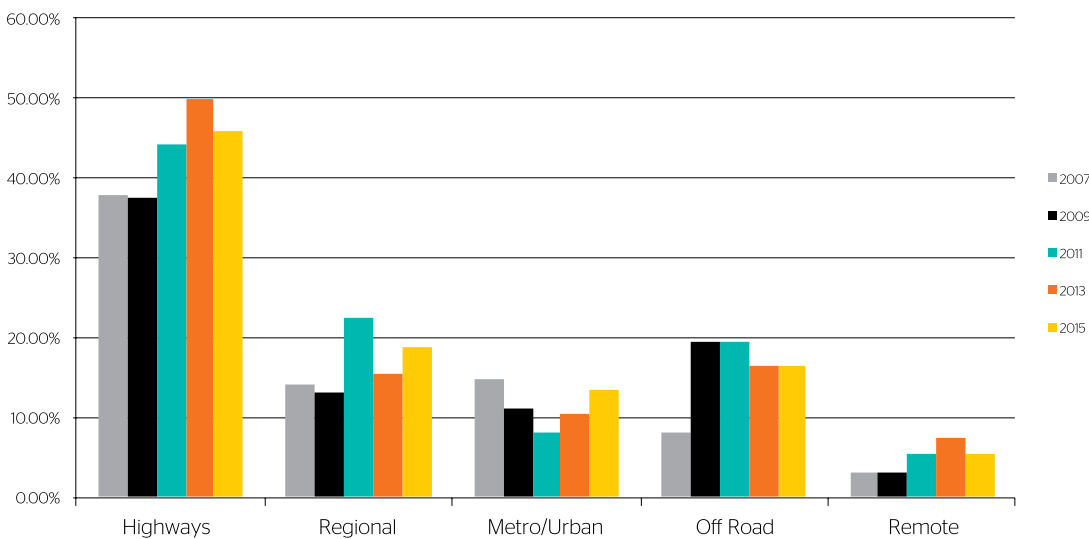
Highways in Australia generally carry a very high proportion of road freight and, as a consequence, this is where the majority of large heavy vehicle losses occur, and where driver behaviour is heavily monitored. In this study 46% of the investigated major impact losses occurred on highways whether coastal, regional or in remote areas.

When reviewing the Australian road network, the system covers more than 817,000 kilometres (506,000 miles) with 80% or 657,000 kilometres (407,000 miles) managed and maintained by local governments. State governments control the remainder which account for 75% of all kilometres travelled.

This study has also noted that there has been a marginal increase in losses occurring on the regionally categorized 'C' grade roads on the network with 18% of major crash incidents. This is an increase from the previous research. Losses reported on urban/metropolitan roads accounted for 13% of incidents which was only a marginal increase. The majority of such losses involved rigid or rigid/dog combinations.

Losses involving off-road vehicle applications accounted for 16% of those major losses investigated. Rollover whilst tipping and vehicle theft were the highest contributors with over 47% of reported losses.

Accidents by Road Category



Accident Specifics: Freight Category

The review of freight category in the context of this report is a general assessment given that current information available through government and industry sources has its limitations. Nonetheless, from the information that is available, our researchers are satisfied that commercial goods vehicles are unladen approximately 20% to 25% of the time whilst in use on road. With 6.9% of severe losses involving empty vehicles we suggest that the occurrence of accidents is reduced whilst the vehicle is unladen.

When analysing freight on board information, we compare crash incident rates with that freight's share of the task. In the case of livestock shipments, for instance, the result once again indicated that losses were over-represented when compared to the share of all freight movements. With an estimate of 4% of the task, livestock incidents increased to over 10% of major claims with almost 70% of losses occurring in NSW and Queensland; 87% with the inclusion of Victoria. Overall, inappropriate speed accounted for 53% of livestock losses. This, coupled with moving stock and high centre

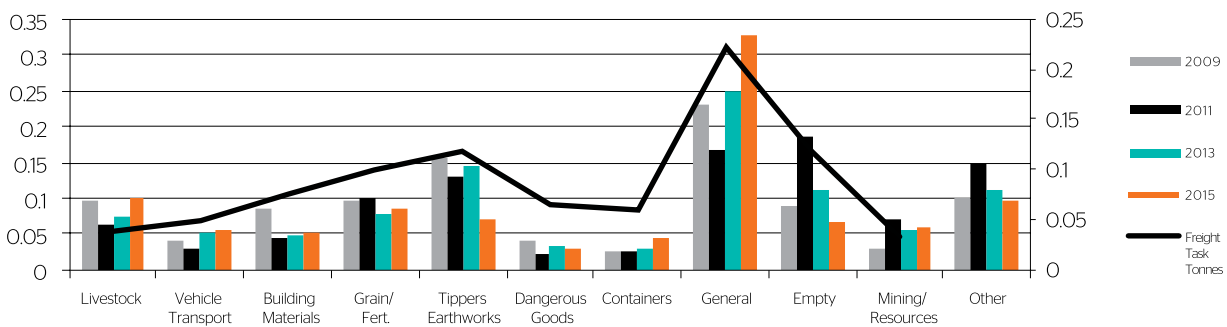
of gravity, lead to rollovers accounting for 60% of all losses involving livestock loading.

The study also notes that 27% of the livestock associated incidents involved equipment operated by graziers and not by 'hire & reward' transport operators.

Further, it was found that losses with operations involving vehicle transportation, mining and resources, refrigerated goods, and grain handling have not differed since the last report. One in four losses involved general freight consignments, with fatigue found to be the major cause for 19% and driver error for 25.8%.

Fatigue continues to be more prevalent with general freight shipments and this is consistent with the previous report that noted a finding of 21.8%. The question for the general freight sector is whether there are additional disciplines concerning driver management, where the commodities are more specialised, and that these disciplines are in place for other transport commodities, are not as strongly adhered to in the general freight sector.

Accidents by Freight On Board



Accident Specifics: Vehicle Configuration

There are various vehicle configurations and combinations considered in this report in the context of major accidents. This continues to be an important point of reference as it influences vehicle control and stability. With the B double share of the freight task now representing 43% of cargo carried, and with 28% of large losses, the B double continues to be the best performing general vehicle from a loss/safety perspective.

Semi trailer articulated combinations, albeit with a reducing share of the task, continue to be the poorest performers with almost 35% of the losses reviewed in this study. Rigid body vehicles, in some cases with trailing dogs, continue to take an increasing share of freight, particularly in the PBS application scheme. Large losses follow the trend with the growth in this class combination. As payloads increase, NTARC advocates a renewed focus on these vehicles

particularly with regard to mass and work hours' compliance, maintenance and driver behaviour. Such combinations servicing the building, quarry and construction industries often run under the radar as they operate generally in an urban / city environment without logbooks.

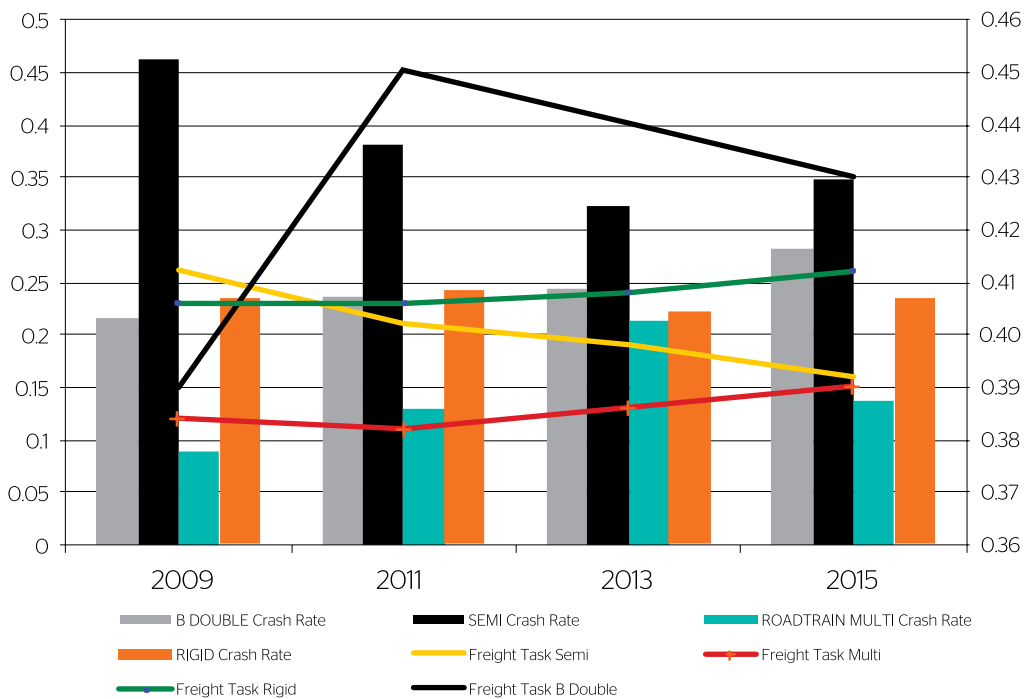
A larger share of the task will also flow to PBS (Performance Based Standards) vehicles such as A Doubles, B Triples and other assorted trailer combinations.<https://www.ntc.gov.au>).

Of note is the changing dynamics of multi-trailer combinations with 13% of major loss incidents against 15% of the task.

Thus far, PBS vehicles have performed exceptionally well as cited in other NTARC involved studies for Austroads.



Accidents by Vehicle Configuration share of crash incidents vs share of freight



With the B double share of the freight task now representing

43%

of cargo carried, and with

28%

of large losses, the B double continues to be the best performing general vehicle from a loss/safety perspective

Accident Specifics: Distance from Point of Departure

The perception that the majority of major impact collisions are in the heavy, 'long distance sector' is not reflected in reality.

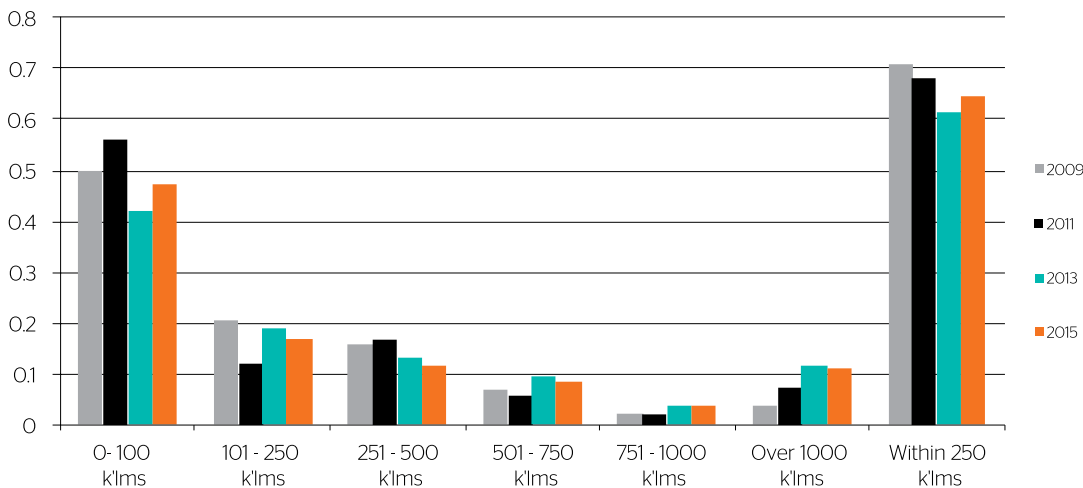
This research again shows the majority of large losses (64.5%) occur within 250 kilometres from the point of departure. Whilst this study reviews all major losses, these figures are skewed, as a proportion of losses involve short haul operations.

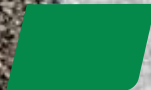
However irrespective of the freight task, this data

includes local, regional, remote and interstate operations with the consistent finding that the incident occurs within the initial 5 hours of any given journey whether it is the outgoing or the return leg.

As indicated, all reports into major crash incidents have found this to be the case and promote the importance of an efficient freight and logistics operations model, loading and equipment preparation and strict monitoring of the driver's fitness for duty.

Accidents by Distance from Point of Departure



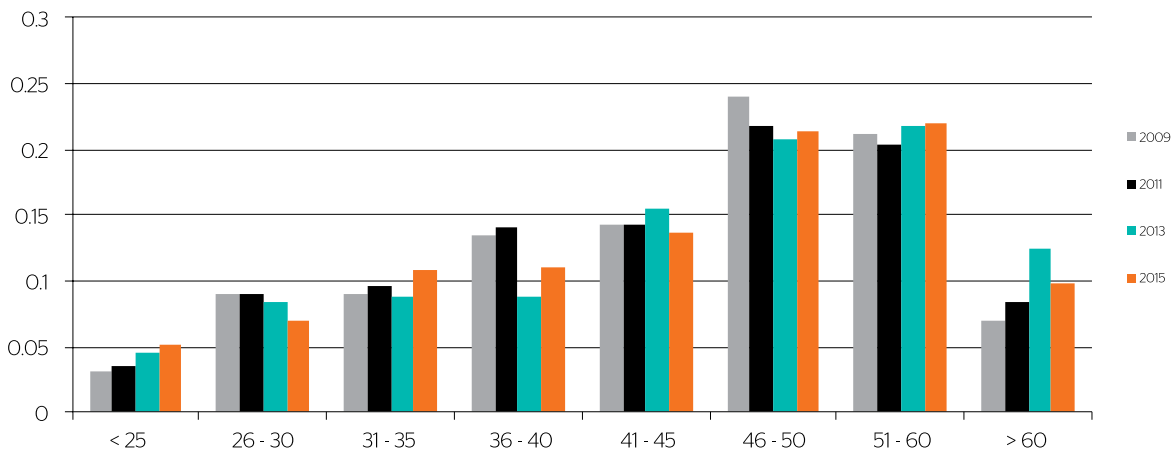


Accident Specifics: Driver's Age

Ageing, male truck drivers dominate the road transport industry and, as a consequence, they are overrepresented in major crash incidents. In this study 66% of drivers were aged over 40 years of age, of which two in five are over 55 years old.

In this report, there has been an increase in major incidents involving drivers over 51 years of age. Drivers over 30 years but under 40 years have also been involved in proportionately more major crash incidents.

Accidents by Driver's Age



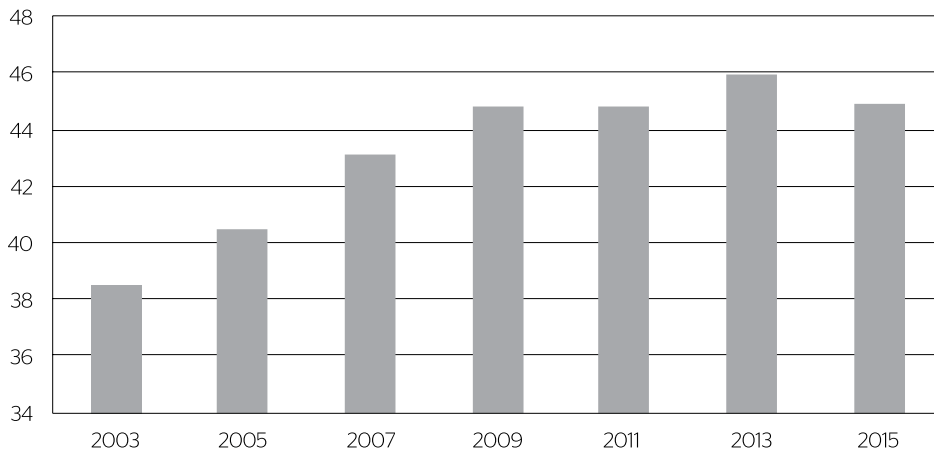
Accident Specifics: Driver's Average Age

Although the average age of truck drivers is higher than in other industries, for the first time in this series of crash studies the average age of drivers has decreased.

Road transport continues to experience difficulties attracting workers, particularly young workers, whereas for those more mature, with fewer career opportunities, ease of access is an enticement to entry and a career change.

In this research the average age of drivers involved in major truck crash incidents decreased to 45 years 5 months, whereas in the prior report the average age was 45 years 11 months. With fewer inductees to the industry, this research continues to focus on this same group as they age.

Average Age of Driver



Accident Specifics: Fatigue Location

In this report, losses attributed to fatigue have remained static since the last research report, with 12.2% of large losses nationally.

Having said that, 82% of major crash incidents attributed to fatigue occurred in the eastern Australian States with 86.8% of these losses occurring on the designated highway network.

The rate of fatigue incidents in Queensland and Victoria has risen noticeably, whilst the NSW result continues to worsen from 2009 when a vast improvement was noted. The Newell and Pacific Highways recorded the greater majority of NSW losses.

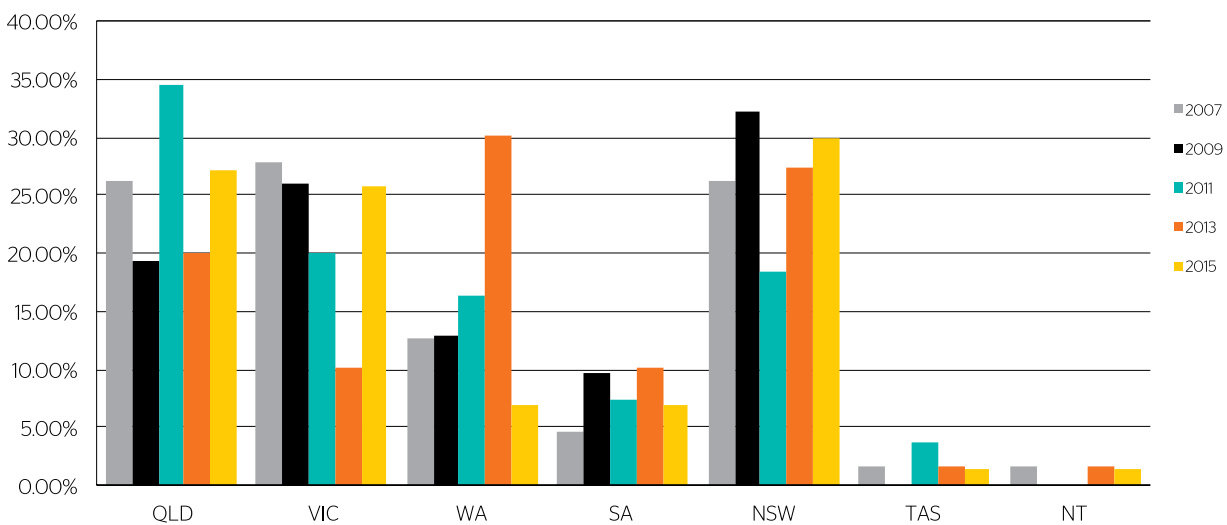
In Western Australia, following the poor performance reported in the 2015 research study on 2013 data, this

result shows encouraging signs of improvement. The WA result improved from 30% of the national fatigue incidents to 6.75%.

Across all fatigue related events, 68.9% occurred on outbound journeys from home base, with 58% of those losses within 500 kilometres from the point of departure. Driver management, particularly with an emphasis of fitness for duty, remains paramount.

With 37.8% of major incidents involving general freight movements this could suggest those managing specific freight tasks (i.e. refrigeration and dangerous goods) devote more attention and resources to compliance and driver management.

Fatigue Caused Accidents by State



Accident Specifics: Fatigue Time of Loss

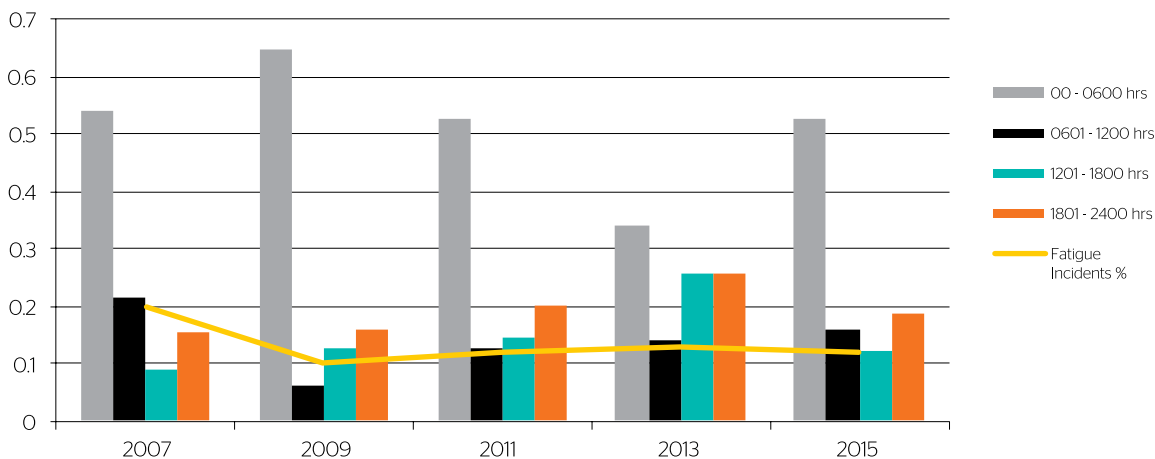
The focus on fatigue, specifically the time of incident researched in this study, indicates that the vast majority (43.6%) of large losses reported between midnight and 0600 hours related to transporters of general freight.

Given the regulatory focus that has been placed on driving hours compliance and fatigue management since the introduction of driver fatigue reform in 2008, this result is concerning.

As a result, NTARC calls on governments to invest in heavy vehicle rest areas and further resources to contribute to fatigue management, driver training and a better understanding of the science of sleep.

This study has also established that vehicles involved in fleet operations were over-represented in 71.62 % of fatigue losses.

Time of Fatigue Caused Accidents

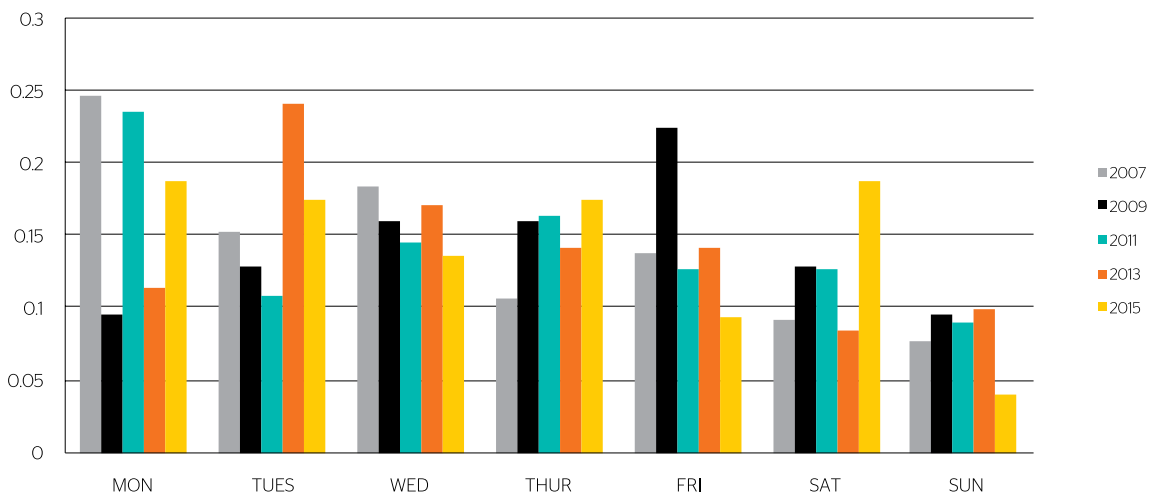


Accident Specifics: Fatigue Day of Loss

Fatigue, in the context of Day of Week for major fatigue related losses, is relevant to this study. Whilst losses early in the week are consistent with previous findings, NTARC has established that the majority are on outbound legs from home port.

There was a noticeable spike on Saturday losses which were investigated with 64.3% related to general freight movements.

Fatigue Caused Accidents by Day of the Week





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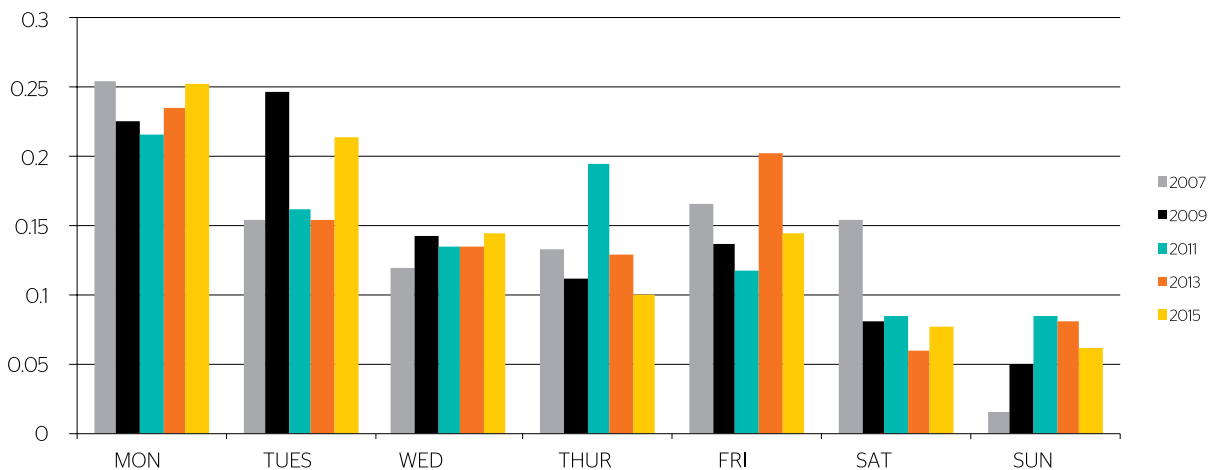
related to general freight
movements

Accident Specifics: Inappropriate Speed Day of Loss

Inappropriate speed continues to be the predominant cause of all major truck crash incidents with 21.4% of reports. This is both a training and management issue with Monday consistently being the worst day across most of the centre's studies. This result follows the trend of major losses occurring early in the week.

Employed drivers working in fleet operations are over-represented in this accident type with 59.2% of speed related losses. Such losses involve drivers who have held their licence for an average duration of 10 years 11 months for the class of commercial vehicle involved.

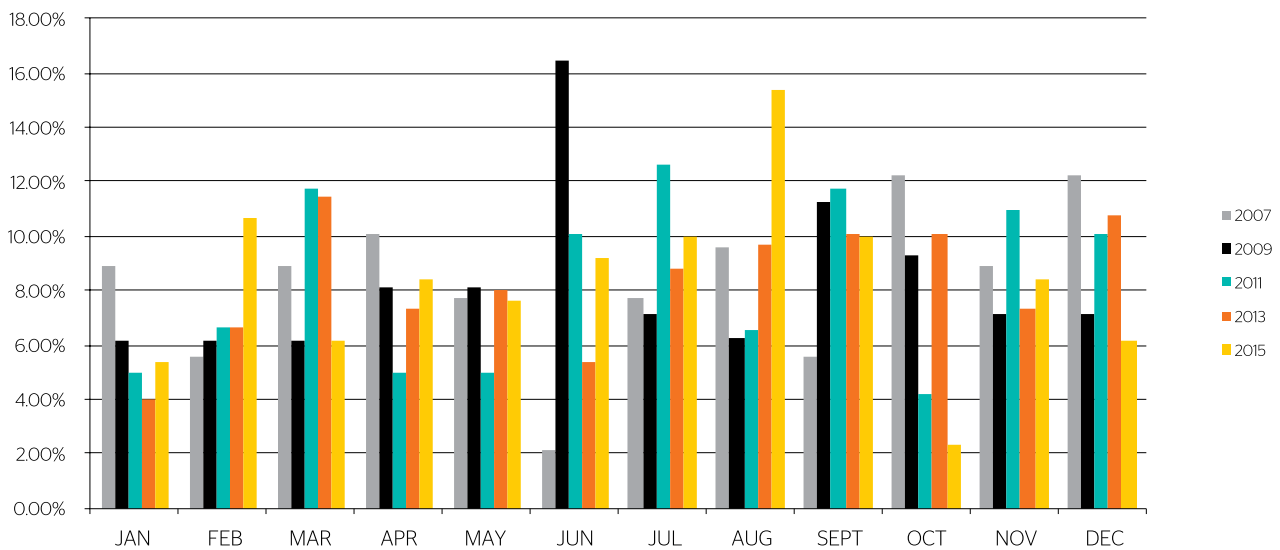
Speed Caused Accidents by Day of Loss



Accident Specifics: Inappropriate Speed Month of Year

With over 15% of losses, August 2015 was the worst performing month regarding speed related claims. The winter period of June through to September was also prominent.

Speed Caused Accidents by Month of the Year

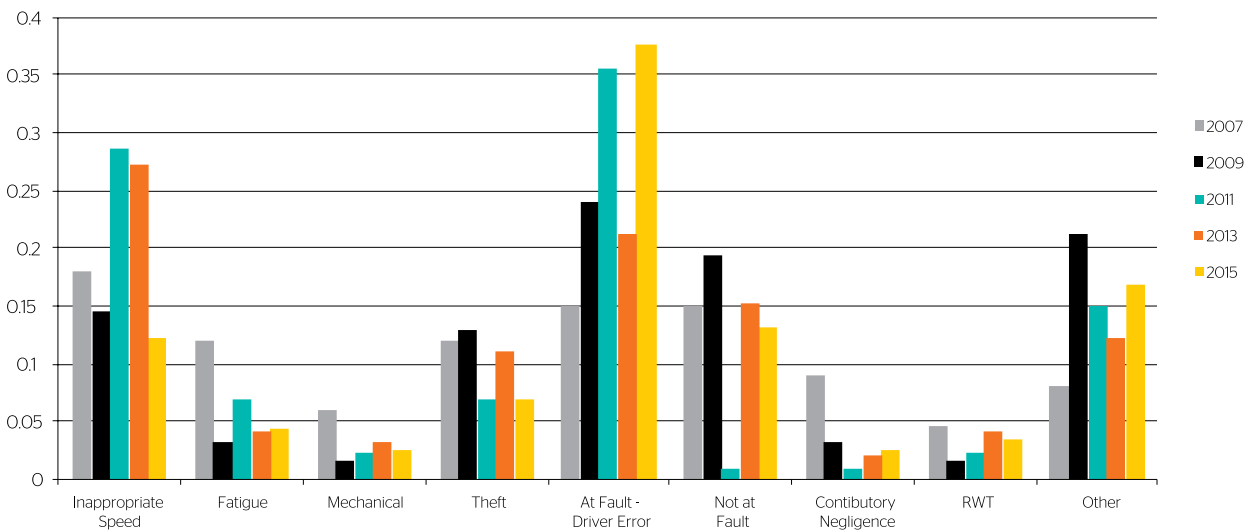


Accident Specifics: Rigid Trucks

Rigid trucks continue to grow in prominence in this market with their share of the task now in the vicinity of 26% (includes dog trailers) of loads carried across all road freight sectors. (ntc.gov.au). In this study, multi-vehicle losses (51%) dominated the claims reported, with the insured driver at fault in 68.8% of major crash incidents involving third parties.

Often, this class of vehicle is the driving career starting point for inexperienced drivers, not necessarily younger drivers. These drivers with 5 years or less experience account for 24.6% of the incidents.

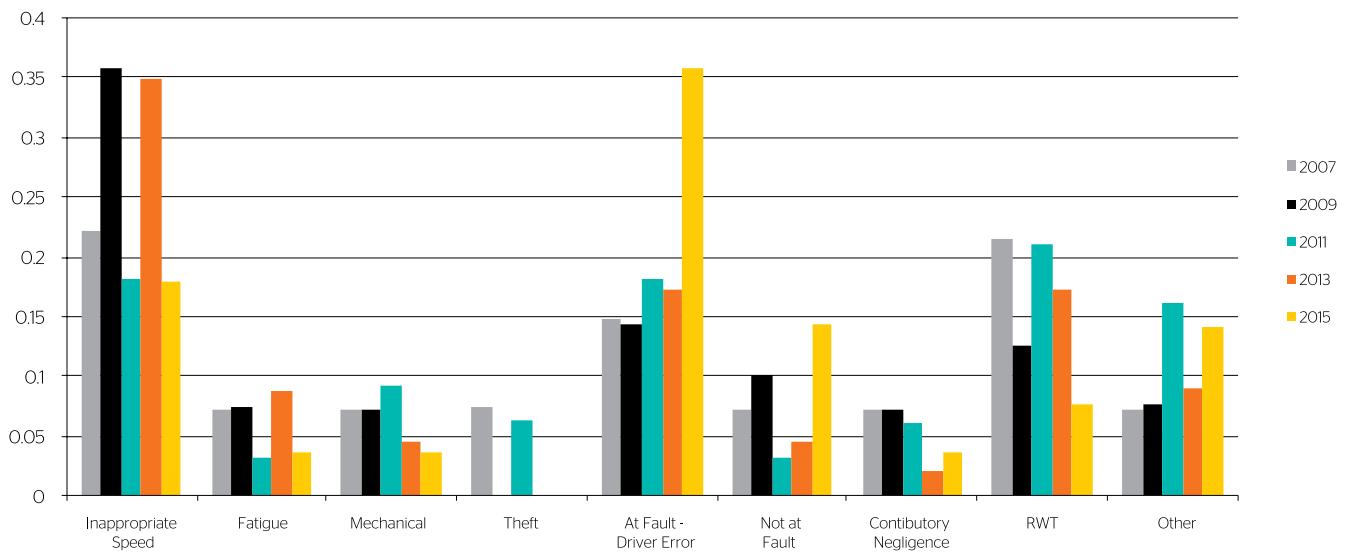
Incidents Involving Rigid Trucks



The results involving rigid trucks (with trailing equipment) reflect a similar consequence. With 46.4% of losses involving multi-vehicle incidents, the insured driver was at fault in 69.2% of cases.

Whereas rolled-over whilst tipping (RWT) has been a relatively common cause of equipment damage in this vehicle class in past studies, the result improved in 2015.

RIGID / DOG Accident Finding



About the Author

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Owen led the foundation of NTI's NTARC in 2002 with the inaugural study into major truck crash incidents. Subsequently the centre has produced biennial research reports on the topic of major crashes and on several other related investigations. Owen has over 40 years' experience in the motor and heavy vehicle insurance sector and is a founding member of NTI. He conducts safety and risk management assessments and facilitates accident research and ongoing accreditation system assessments. He specialises in accident investigation, workplace law and logistics management.

He holds a Masters in Logistic Research awarded in 2010 for the production of the centre's Major Crash Reports. He is a fellow of the Chartered Institute of Logistics & Transport and recognised as a Certified Transport Planner.

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Kim is an industry expert specialising in transport and logistics. He has previously held positions as Transport Economist, Manager of Transport Operations and Strategy for Australia's largest network Transport Operator before becoming a principal consultant and researcher in the field of freight productivity.

He has published over 100 research papers for major domestic and international clients and journals and worked with some of Australia's and Europe's leading transport regulatory agencies in the areas of freight productivity, infrastructure, freight and logistics policy, freight pricing and safety.

Kim is a Director of the Industrial Logistics Institute in Melbourne and is the National Chair of Professional Development and Education for the Chartered Institute of Logistics and Transport Australia, Kim was also appointed as a fractional Principal Fellow with the Department of Infrastructure Engineering at the University of Melbourne in 2002 and an Honourary Fellow at the Faculty of Business at ACU from 2012 to 2016.

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