Heavy vehicles

Heavy vehicles[1] travel more than 1 billion kilometres per year in South Australia. Although they make up around 4% of vehicles registered, heavy vehicles represent 8% of the kilometres travelled in the State[2] and are involved on average in 16% of fatal crashes and 8% of serious crashes[3]. Fatal and serious crashes involving heavy vehicles are estimated to cost over $100 million per year.

Heavy vehicles present a significant road safety issue because of the long distances they travel and because of their mass and rigidity if another vehicle collides with them.

Fatal crashes involving heavy vehicles previously averaged around 20 per year[4]. This decreased to 14 fatal crashes in 2006 and 12 in 2007. In 2008, the number of fatal crashes involving heavy vehicles increased to 19. Serious casualty crashes (crashes resulting in death or serious injury) have been decreasing in recent years. The number of serious casualty crashes has decreased from around 120 per year to just 100 per year (2006-2008 average).

Table 1: Fatal and serious crashes involving heavy vehicles, South Australia, 1999-2008

	Fatal crashes	Serious Injury crashes	Total Serious casualty crashes
1999	27	95	122
2000	28	84	112
2001	22	101	123
2002	24	100	124
2003	21	108	129
2004	21	77	98
2005	20	75	95
2006	14	99	113
2007	12	82	94
2008	19	74	93
Total	208	895	1103

[1] Heavy vehicle includes the following vehicle types: Rigid truck, Semi Trailer, Bus, B Double and Light truck
[2] Data sourced from Australian Bureau of Statistics 'Survey of Motor Vehicle Use', 12 months ended 31 October 2007, Cat. No. 9208.0
[3] Based on 2004-2008 crash data
[4] Based on 2003-2007 crash data

Overview of heavy vehicle fatal and serious crashes in South Australia (2004-2008)

A high proportion of serious casualty crashes involving heavy vehicles are right angle (17%), rear end (15%) and head on crashes (13%). For 55% of crashes the driver deemed responsible is the heavy vehicle driver.

The majority of heavy vehicles involved in serious casualty crashes are rigid trucks larger than 4.5 tonne (42%), followed by B doubles, Semi trailers or articulated trucks (42%), with buses accounting for 13% of crashes.

Alcohol and Drugs

Most driver and rider fatalities and a proportion of serious injuries are tested for either or both alcohol and drugs. Even in a serious crash, truck drivers may only receive minor injuries, if any, in a collision, and as a result, may not be tested for alcohol or drugs. While alcohol is a factor in up to a third of all driver and rider fatalities in South Australia there has only been two heavy vehicle driver fatalities with an illegal BAC in the last 5 years. Similarly for drugs, although 15% of fatally injured drivers or riders test positive to an illegal drug, there were no heavy vehicle driver fatalities that tested positive to an illegal drug (from a total of 5 heavy vehicle driver fatalities tested) .

Seatbelts

Nearly 36% of heavy vehicle drivers killed or seriously injured were not wearing a seatbelt at the time of the crash. This is well above the average of all drivers where about 12% of drivers killed or seriously injured were not wearing a seatbelt.

Fatigue

Fatigue is a known contributing factor to road crashes but the number of crashes in which fatigue plays a part is often difficult to accurately determine.

There is no universal definition of fatigue and it is difficult to objectively measure the degree of driver fatigue following a crash. However the Australian Transport Bureau[5] (ATSB) constructed an operational definition of a fatigue-related crash. The definition is based on a set of well-researched selection criteria and uses crash characteristics routinely collected by different traffic authorities.

Using the ATSB definition it was found that 28% of fatal crashes involving heavy vehicles in SA were due to fatigue[6]. In nearly two thirds of these cases it was the driver of the other vehicle that was fatigued, and not the heavy vehicle operator.

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[5] Definition is from the ATSB Road Safety Research Report OR 23 'Fatigue-related crashes: An analysis of fatigue related crashes on Australian roads using an operational definition of fatigue'

[6] Based on 2004-2008 fatal crash data

Nationally ATSB found that a third of articulated truck crashes involved driver fatigue, more than double the proportion of non-articulated truck crashes that involved driver fatigue over the same period. Nearly 80% of the fatigue-related articulated truck crashes involved more than one vehicle and 62% occurred during the day time hours of 6am-6pm. Again it wasn't necessarily the truck driver that was fatigued; in fact where it could be identified which driver was fatigued in a two car collision, more than two thirds were drivers of passenger cars.

Location of crashes

23% of fatal and serious crashes involving heavy vehicles occur on Auslink roads and a further 53% occur on State arterial roads. Overall 55% of heavy vehicle crashes occur in rural areas.

In the previous 5 years (2004-2008) midblock crashes involving heavy vehicles occurred most frequently on:

- Dukes Highway - average of 4 serious casualty crashes per year
- Sturt Highway - average of 4 serious casualty crashes per year
- Eyre Highway – average of 2 serious casualty crashes per year
- Princes Highway – average of 2 serious casualty crashes per year

Age of driver

The age of the drivers involved in heavy vehicle serious casualty crashes are generally older than those for passenger vehicles. This is likely to reflect that there are a greater number of heavy vehicle drivers in the older age groups. The National Transport Commission suggest that most transport operators and insurers give preference to older more experienced heavy vehicle drivers[7]. The following table is an overview of the age of heavy vehicle drivers involved in the last 5 years.

Table 2 – Age of heavy vehicle drivers involved in fatal and serious crashes

Age	Proportion of drivers involved in fatal and serious crashes
16-19	1%
20-29	16%
30-39	24%
40-49	27%
50-59	23%
60-69	7%
70+	1%
Total	100%

[7] National Road Transport Commission (1999). *Potential for Fast-Tracking Heavy Vehicle Drivers*, Melbourne, January 1999.

Speed

Vehicle travel speeds affect both the risk of crash involvement and the severity of any crashes that happen, including crashes caused by factors other than speed.

Speed is generally under reported as an apparent driver error in South Australian road crash data and under estimates the role of speeding in crashes.

A national study of heavy vehicles and speeding has shown that a high proportion of heavy vehicles exceed sign posted speed limits on both open rural and urban roads[8]. A paper on speed and heavy vehicle safety estimated a 29% reduction in heavy vehicle crashes if all heavy vehicles complied with speed limits[9].

The following table shows that up to half of all heavy trucks exceed speeds up to 5km/h above the speed limit in 110km/h speed zones in South Australia for 2001[10] and 2006[11]. Over the time period high level speeding of more than 15km/h over the speed limit has decreased. The proportion of Articulated and B-Double vehicles speeding 6-15km/h over the speed limit has generally halved.

Table 3 - Degree of speeding from SA sites, 110km/h Speed Zone, 2001

Excess Speed (km/h)	Proportion of Sample Speeding (%)			
	Rigid	Articulated	B-Double	Road Train
≤ 5km/h	5%	41%	51%	33%
6-15km/h	2%	13%	11%	42%
> 15km/h	1%	2%	1%	6%
Total speeding	**8%**	**56%**	**63%**	**81%**

Table 4 – degree of speeding from SA sites, 100km/h Speed Zone, 2006

Excess Speed (km/h)	Proportion of Sample Speeding (%)			
	Rigid	Articulated	B-Double	Road Train
≤ 5km/h	8%	45%	54%	34%
6-15km/h	3%	5%	6%	46%
> 15km/h	0%	0%	0%	3%
Total speeding	**11%**	**51%**	**61%**	**84%**

[8] National Transport Commission, Australia (2005). *Heavy vehicle speed compliance: Review of Regulatory Approaches, discussion paper*, Melbourne, October 2005.

[9] Brooks, C. (2002). *Speed and Heavy Vehicle Safety.* Papers for the NRTC/ATSB National Heavy Vehicle Safety Seminar, Melbourne, October 2002.

[10] National Transport Commission, Australia (2005). *Heavy vehicle speed compliance: Review of Regulatory Approaches, discussion paper*, Melbourne, October 2005.

[11] 2006 Culway speed distribution data from Traffic Information Unit, TIMS, DTEI, November 2007