



Diverted attention

CRASH STATISTICS FOR THE YEAR ENDED 31 DEC 2007

Prepared by Strategy and Sustainability, Ministry of Transport

CRASH FACTSHEET

2008

Diverted attention¹ includes a range of activities where drivers' attention is directed away from activities critical for safe driving towards competing events, objects or people, inside or outside of the vehicle. 'Attention diverted by' is largely synonymous with distraction², and in the Crash Analysis System covers activity such as:

- talking with passengers
- using cell-phones
- eating and drinking
- reaching or searching for objects in the vehicle
- adjusting vehicle controls
- adjusting the radio/in-vehicle entertainment system and changing CDs/cassettes
- dealing with pets or animals in the vehicle
- being emotionally upset/angry
- smoking
- rubber-necking
- looking at scenery or advertising
- watching or looking at other traffic or people
- searching or looking for a location/intersection or specific place
- being dazzled by sunstrike or headlights and taking action in response (i.e. adjusting sunvisor)
- looking at other activity/events outside-of-the-vehicle

People have a finite amount of attention resource. Driving requires maintaining control of a vehicle while simultaneously maintaining awareness of the surroundings and potential hazards. Diverting attention away from activities critical for safe driving directly impairs awareness, the ability to make good driving decisions and driving performance. In some cases the additional activity can even reduce a drivers' ability to realise that they are overloaded. When drivers' attention is diverted, they may not pick up changes in the driving environment as quickly, their ability to react can be reduced and driving performance such as speed or lane control can be affected.

It is difficult to identify whether a driver's attention has been diverted in an incident or crash. International research suggests that the contribution of the diversion of attention in crashes may be under-represented in police-reported crash systems. With those comments in mind, this crash factsheet provides a summary of the information contained within the New Zealand police-reported crash system.

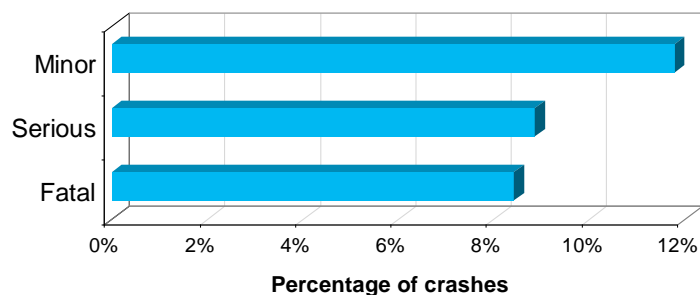
In 2007, diverted attention was identified as a contributing factor in a total of 1,378 crashes (11% of all crashes), of which 34 were fatal traffic crashes, 181 were serious injury crashes and 1,163 were minor injury crashes. These crashes resulted in 41 deaths, 224 serious injuries and 1,668 minor injuries. The total social cost of crashes involving diverted attention was about \$350 million, which is approximately 9.5 percent of the social cost associated with all casualty crashes.

In New Zealand, over the years 2005 to 2007, 'attention diverted by' for drivers was a factor in 11 percent of all casualty crashes, eight percent of fatal crashes, nine percent of serious injury crashes and 12 percent of minor injury crashes. Sixty-nine percent of the fatal crashes, 47 percent of the serious injury crashes and 35 percent of the minor injury crashes occurred on the open road (speed zones over 70 km/h).

¹ Diverted attention refers to a series of codes within the Crash Analysis System (CAS) called 'Attention diverted by'.

² Regan, Lee and Young (2008) have defined distraction as "the diversion of attention away from activities critical for safe driving, towards a competing activity."

Percentage of crashes with diverted attention as a factor
(2005 - 2007)



Other factors or physiological states, such as fatigue, speed and/or alcohol, may contribute to a driver's willingness to engage in secondary tasks or distracting activities. These states may also increase the effects of associated performance decrements. Of the 90 'attention diverted by' fatal crashes for the three-year period 2005-2007, approximately 17 percent involved alcohol as a contributing factor and 12 percent involved speed as a contributing factor. For the 561 'attention diverted by' serious injury crashes for the same three-year period, approximately 14 percent involved alcohol as a contributing factor while approximately seven percent involved speed as a contributing factor.

Time series

Crashes and casualties with driver diverted attention as a contributing factor

Year	Crashes with driver diverted attention as a factor				Casualties from crashes with driver diverted attention as a factor			
	Fatal		Injury		Deaths		Injuries	
	Number	%	Number	%	Number	%	Number	%
1990	20	3.1%	892	7.3%	21	2.9%	1315	7.4%
1991	34	6.1%	928	7.9%	40	6.1%	1365	8.1%
1992	28	5.2%	996	9.0%	29	4.5%	1415	8.8%
1993	24	4.6%	762	7.2%	25	4.2%	1119	7.4%
1994	22	4.4%	882	7.7%	23	4.0%	1304	7.8%
1995	24	4.8%	963	8.2%	25	4.3%	1367	8.1%
1996	26	5.7%	864	8.5%	27	5.3%	1248	8.4%
1997	27	5.8%	746	8.2%	32	5.9%	1098	8.2%
1998	24	5.5%	768	9.2%	24	4.8%	1146	9.2%
1999	22	5.1%	705	8.7%	24	4.7%	1031	8.5%
2000	28	7.3%	706	9.4%	35	7.6%	1062	9.6%
2001	17	4.3%	706	8.3%	20	4.4%	1034	8.3%
2002	23	6.3%	912	9.2%	26	6.4%	1331	9.5%
2003	27	6.7%	1032	10.0%	30	6.5%	1429	9.9%
2004	37	9.9%	1188	11.8%	40	9.2%	1665	11.8%
2005	30	8.8%	1188	11.0%	37	9.2%	1587	10.9%
2006	26	7.5%	1215	11.1%	29	7.4%	1711	11.3%
2007	34	9.0%	1344	11.5%	41	9.7%	1892	11.8%

Note: The table shows crashes and all casualties from police-reported crashes where at least one driver was recorded as having diverted attention as a contributing factor in the crash. Not included are the crashes where only the pedestrians or cyclists (rather than a driver) were affected by diverted attention. As with other subjective measures care must be taken with a time series of 'diverted attention' information. It is possible that the subjective assessment of diverted attention by reporting officers has changed over the years.

Drivers are not the only road users to be affected by diverted attention. In the last five years (2003-2007), a total of 78 cyclists (one of whom was killed) were involved in crashes, and a total of 29 pedestrians (one of whom was killed), were involved in crashes where their attention was diverted.

Who dies?

For every 100 drivers or riders killed in road crashes where diverted attention is a contributing factor, 48 of their passengers and another 110 road users die with them.

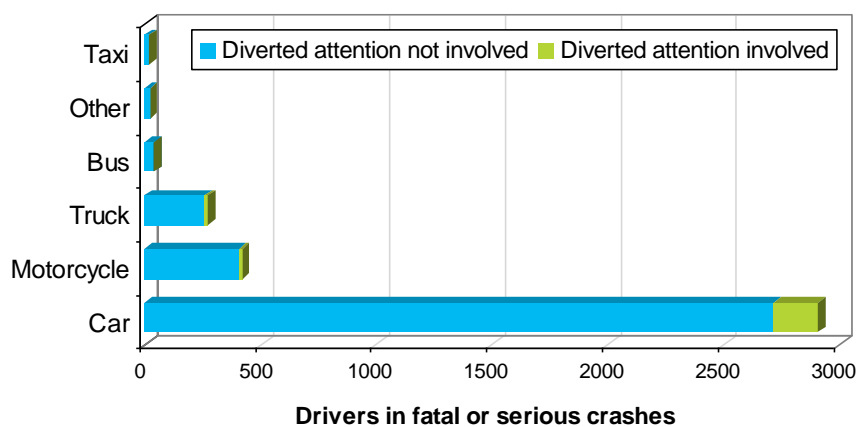
Deaths in crashes where the drivers' diverted attention was a contributing factor (2005 - 2007)				
Age	'Attention diverted' involved drivers	Passengers with 'attention diverted' involved drivers	Other road users	Percentage of all deaths
0-14	0	3	3	7%
15-19	11	8	1	10%
20-24	8	2	2	8%
25-29	2	1	3	8%
30-39	5	2	5	7%
40-49	7	1	6	8%
50-59	3	0	8	10%
60+	6	3	16	11%
Unknown	0	0	2	13%
Total	42	20	46	9%

Of the 46 other road users killed who were hit by a driver whose attention was diverted, 16 were pedestrians (35%), ten were drivers (22%) and six were cyclists (13%). The remainder were passengers (not in the vehicle with the driver whose attention was diverted), motorcyclists or their passengers, or other road users.

Note: Because of the relatively low numbers of fatal crashes involving diverted attention, and the difficulties of establishing whether diverted attention was a contributing factor in a crash where drivers have been killed, the subsequent analyses are based on fatal and serious injury crashes.

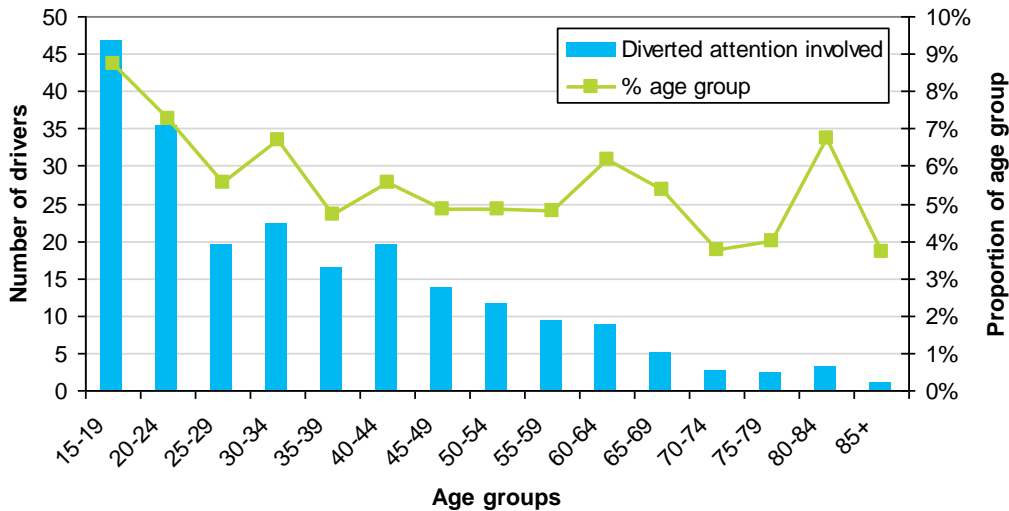
Drivers involved in fatal and serious crashes

Drivers involved in fatal or serious crashes by vehicle type
(annual average 2005 - 2007)



From 2005 to 2007, diverted attention was a contributing factor for 6.5 percent of car and van drivers involved in fatal and serious crashes. Similarly, diverted attention was a contributing factor for five percent of truck drivers, three percent of motorcyclists, seven percent of taxi drivers, no bus drivers and three percent of other drivers.

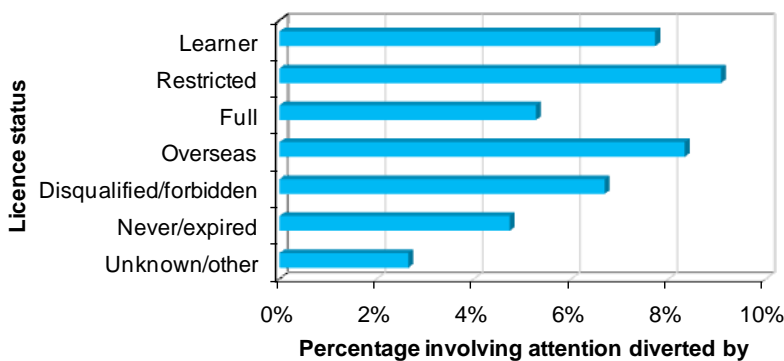
Drivers in fatal or serious crashes involving diverted attention by age group (annual average 2005 - 2007)



Younger drivers aged 15-24 appear to have the highest frequency of diverted attention-related fatal and serious accidents. There is international evidence that suggests novice drivers could be particularly susceptible to diverted attention crashes, but this finding can also be explained by the over-representation of these age groups in the crash statistics in general.

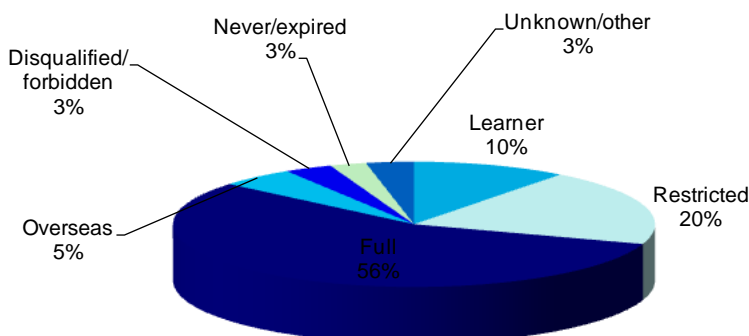
In 2005-2007, diverted attention was a factor for eight percent of all male drivers and five percent of all female drivers involved in fatal and serious crashes.

Percentage of drivers in fatal or injury crashes involving diverted attention by licence status (2005 - 2007)



Learner (8%) and restricted (9%) licence holders and drivers on an overseas licence (8%) are slightly more likely to be in fatal and serious injury crashes involving diverted attention as a contributing factor than holders of other licence classes.

Licence status of drivers in fatal or serious crashes involving diverted attention (2005 - 2007)

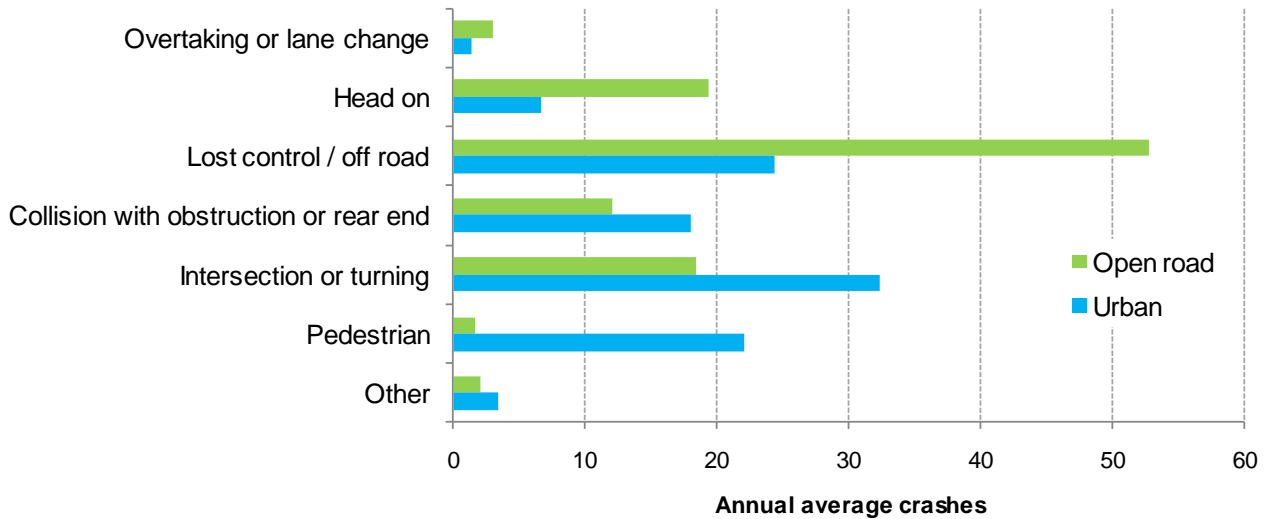


The majority of fatal and serious crashes with driver diverted attention involve full licence holders (57%), with restricted (20%) and learner licence holders (10%) comprising the next two largest groups.

Types of crash

The following graph shows the number of driver diverted attention crashes by type of crash and type of road environment: open road or urban.

Types of fatal or serious crashes where the driver's attention was diverted (annual average 2005 - 2007)

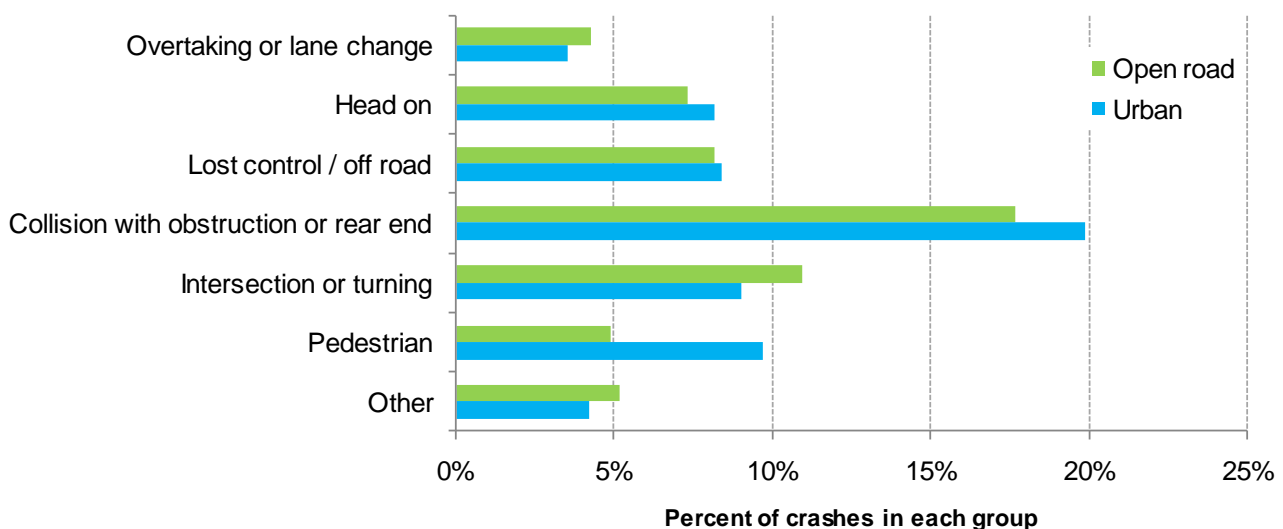


On the open road (roads with speed limits over 70 km/h), loss of control/run off road (48%) and head-on (18%) are the most common types of fatal and serious crash involving driver diverted attention. The next largest crash type for open road crashes involving 'attention diverted by' is intersection or turning crashes (17%).

On urban roads (roads with speed limits up to 70 km/h), crashes involving intersections or turning manoeuvres (30%) and loss of control/run off road crashes (23%) are the most common types of fatal and serious crash involving driver diverted attention. The next largest urban crash types involving diverted attention involve pedestrians (20%) and collisions with obstructions or rear-end crashes (17%).

The following graph shows, for each crash type/road type grouping, the percentage of crashes that involve driver attention diverted.

Percentage of each crash type where the driver's attention was diverted: fatal and serious crashes 2005-2007

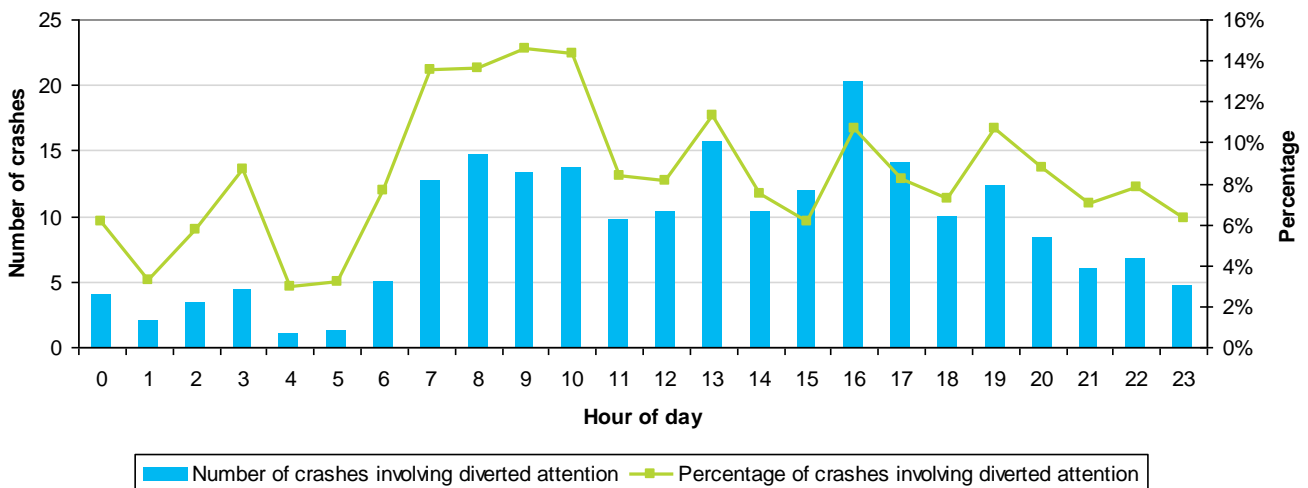


While the average number of collisions with obstruction or rear-end crashes involving diverted attention is low, this type of crash has the highest contribution of driver diverted attention; 20% for urban crashes and 18% for open road crashes.

When do crashes involving attention diverted by occur?

The majority of the fatal and serious injury crashes involving diverted attention as a contributing factor occur during the day around the peak commuting times in the morning and in the evening. The evening commute period is the worst in terms of the number of crashes involving diverted attention. However, as a proportion of all crashes occurring within each hour, the worst period appears to be from the morning commute up to around 11 am.

Fatal or serious crashes with driver diverted attention as a factor by time of data
(annual average 2005 - 2007)



Note: Hour of day: 0 = midnight-12:59 am; 1 = 1:00 am-1:59 am and so on.

For further information on crash statistics see *Motor Vehicle Crashes in New Zealand*, the annual statistical statement produced by the Ministry of Transport. This publication is available in secondary school libraries and many public libraries.

Enquiries relating to crash statistics may be directed to the Ministry of Transport, PO Box 3175, Wellington, or by email on info@transport.govt.nz. For more information about road safety, visit the Ministry of Transport website at www.transport.govt.nz. "Attention diverted by" was prepared by Strategy and Sustainability, Ministry of Transport, July 2008.

Reference: Regan, M. A., Lee, J. D. & Young, K. L. (eds.) (2008) *Driver distraction: Theory, effects and mitigation*. Florida, USA: CRC Press (in press).