



**WORK-RELATED TRAUMATIC INJURY
FATALITIES, AUSTRALIA**

2015

October 2016



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Foreword

The aim of this report is to provide statistics about people who die each year from injuries that arose through work-related activity. This includes fatalities resulting from an injury sustained in the course of a work activity (worker fatalities) and as a result of someone else's work activity (bystander fatalities). Earlier reports have included fatalities that occurred while the worker was commuting to or from work (commuter fatalities), however, these fatalities have always been difficult to distinguish from other road fatalities and this report relies heavily on workers' compensation data. As fewer jurisdictions are now providing compensation coverage for commuting, the integrity of the commuter fatality collection has diminished and has therefore been ceased.

Injury is defined as a condition coded to 'External causes of morbidity and mortality' and 'Injury, poisoning and certain other consequences of external causes' in the International Statistical Classification of Diseases and Related Health Problems, Tenth Revision, Australian Modification (ICD-10-AM).

The scope of this collection includes all persons:

- who were fatally injured, and
- whose injuries resulted from work activity or exposures, and
- whose injuries occurred in an incident that took place in Australian territories or territorial waters.

The report includes all persons killed:

- while working including unpaid volunteers and family workers, persons undertaking work experience and defence force personnel killed within Australian territories or territorial waters or travelling for work (worker fatalities), or

- as a result of someone else's work activity (bystander fatalities).

The collection specifically excludes those who died:

- of iatrogenic injuries — those where the worker died due to medical intervention
- due to natural causes such as heart attacks and strokes, except where a work-related injury was the direct cause of the heart attack or stroke
- as a result of diseases, such as cancers, and
- by self-inflicted injuries (suicide).

People who died of injuries caused by someone else's work activity while themselves at work are classified as a worker rather than as a bystander.

Changes from previous publications may also be evident due to the availability of additional information from finalised coroners reports and additional workers' compensation claims.

For explanatory notes on the data for this publication, refer to <http://www.safeworkaustralia.gov.au/sites/SWA/about/Publications/Documents/929/explanatory-notes-datasets.pdf>



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Summary of findings



In the 13 years from 2003 to 2015,
3207 workers
have lost their lives in work-related incidents.



The fatality rate has decreased

by 44 per cent from 3.0 fatalities per 100 000 workers in 2007 to 1.6 in 2015.



In 2015, 195 workers

were fatally injured at work. This is 37 per cent lower than the highest number of worker deaths recorded in the series (310) in 2007.

In 2015, **almost half**

(47 per cent) of the worker fatalities occurred within the Transport, postal and warehousing and Agriculture, forestry and fishing industries.

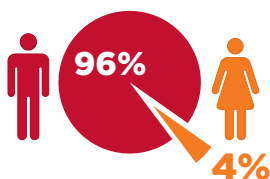


Across the 13 years of the series, two-thirds of
worker fatalities involved vehicles

In 2015, 115 of the 195 fatalities (59 per cent) involved a vehicle.



In 2015, 53 workers (27 per cent) were killed in a vehicle collision, 27 workers (14 per cent) were killed when they were hit by moving objects, and 26 workers (13 per cent) died after falling from height.



In 2015, 187 of the 195 fatalities (96 per cent)

involved male workers



The 195 fatalities in 2015 equates to a fatality rate of 1.6 fatalities per 100 000 workers. This is the

lowest fatality rate

since the series began 13 years ago. The highest fatality rate of 3.0 was recorded in 2004 and 2007.



Over the period from 2003–15,
60 per cent of bystander fatalities

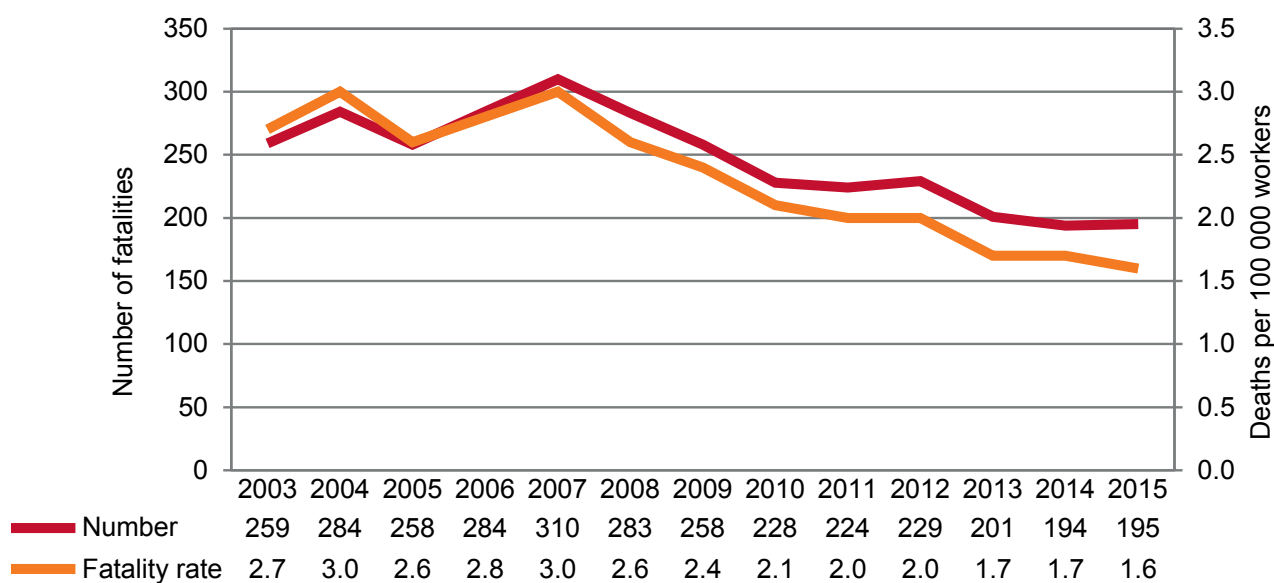
were due to a vehicle collision, with being hit by moving objects accounting for a further 16 per cent.

Worker fatalities

Injuries at work resulted in the deaths of 195 workers in 2015, one more than in 2014 which was the lowest number since the series began in 2003. The highest number of work-related injury fatalities was recorded in 2007 when there were 310 deaths.

Figure 1 shows the fatality rate of 1.6 fatalities per 100 000 workers in 2015 is the lowest rate since the series began.

Figure 1: Worker fatalities: number of fatalities and fatality rate, 2003 to 2015

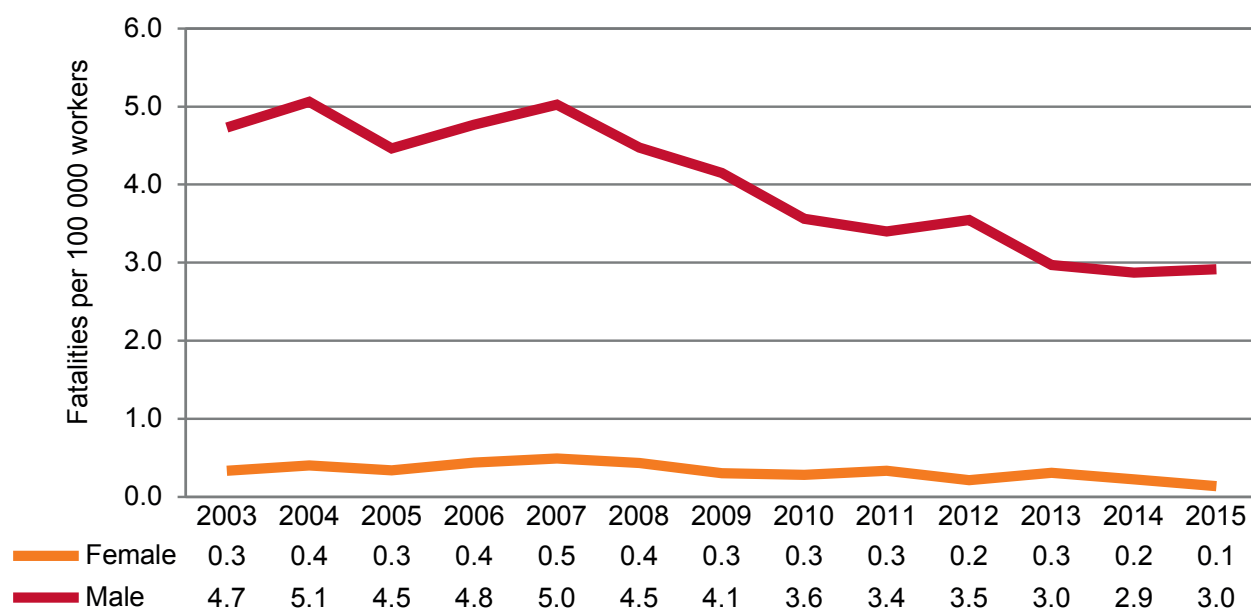


Sex

In 2015, 96 per cent (187 of the 195 fatalities) of workers killed were men.

Figure 2 shows the fatality rate for male workers declined over the 13 years from 4.7 fatalities per 100 000 workers in 2003 to 3.0 in 2015. Over the same period the fatality rate for female workers decreased from 0.3 to 0.1.

Figure 2: Worker fatalities: fatality rate by sex, 2003 to 2015



Age group

Table 1 shows the distribution of fatalities by age group. This distribution shows there were fewer fatalities in the youngest and oldest age groups, which reflects the lower workforce participation of these age groups compared with other age groups.

While the number of fatalities in 2015 is the second lowest in the series, the age profile was similar to previous years. The exception was the 65 years and over age group, which accounted for a slightly higher proportion of fatalities than other years.

These data show the 45–54 years age group recorded the highest number of fatalities in the past 13 years.

Table 1: Worker fatalities: number by age group, 2003 to 2015

Year	Less than 25	25-34	35-44	45-54	55-64	65 and over	Total*
2003	26	55	61	53	40	24	259
2004	28	56	53	62	53	32	284
2005	24	55	57	57	41	24	258
2006	26	53	72	51	60	22	284
2007	36	48	68	68	56	34	310
2008	34	46	55	63	50	35	283
2009	21	44	44	63	59	27	258
2010	18	35	39	50	57	29	228
2011	23	21	43	58	41	38	224
2012	28	31	45	53	44	27	229
2013	18	30	37	44	37	35	201
2014	22	32	27	42	38	32	194
2015	16	33	26	46	38	36	195
Total	320	539	627	710	614	395	3 207

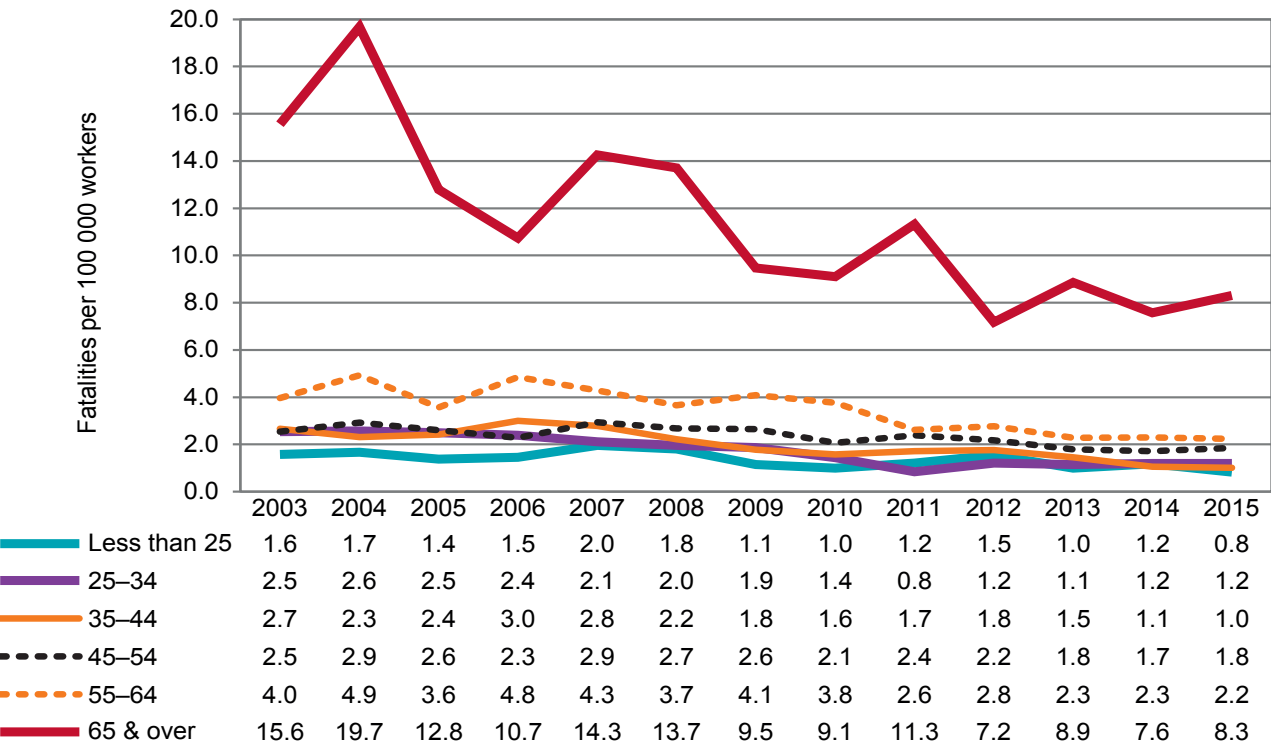
* Total includes persons where age at death is unknown



Figure 3 shows fatality rates have fallen over the past 13 years for all age groups. However, while the gap between the oldest age group and the younger age groups has narrowed, the fatality rate of the oldest age group remains four to 10 times higher than the younger age groups.

In 2015, fatality rates generally increased with age from 0.8 fatalities per 100 000 workers in those aged under 25 years to 8.3 in workers aged 65 years and over.

Figure 3: Worker fatalities: fatality rate by age group, 2003 to 2015



Mechanism of fatality

Table 2 shows 53 worker fatalities in 2015 (27 per cent) were due to a vehicle collision. This mechanism is used when an occupant of a vehicle is killed following a collision with another vehicle or a stationary object. This is a major reduction from previous years with the highest being recorded in 2007 with 129 fatalities.

Being hit by moving objects, falls from a height and being hit by falling objects accounted for 14 per cent, 13 per cent and 11 per cent of fatalities respectively in 2015.

The top four mechanisms accounted for almost two-thirds of work-related fatalities in 2015 (65 per cent). For the complete time series see Appendix A1.

Table 2: Worker fatalities: number by mechanism of incident, 2003 to 2015
(selected years, sorted by 2015 fatalities)

Mechanism of incident	2003	2005	2007	2009	2011	2013	2015	% of 2015 fatalities	% of total fatalities
Vehicle collision	108	103	129	112	78	69	53	27%	39%
Being hit by moving objects	40	29	38	31	19	24	27	14%	12%
Falls from a height	27	26	32	29	22	24	26	13%	11%
Being hit by falling objects	15	25	24	15	27	25	21	11%	9%
Rollover of non-road vehicle	9	11	12	12	11	15	13	7%	4%
Being trapped between stationary and moving objects	9	12	11	7	13	7	12	6%	4%
Being trapped by moving machinery	6	11	11	11	13	10	9	5%	4%
Contact with electricity	13	13	13	13	10	8	8	4%	4%
Drowning	4	2	5	8	3	4	5	3%	2%
Explosion	3	2	1	1	5	1	5	3%	1%
Being assaulted by a person or persons	12	7	8	4	3	6	4	2%	2%
Being hit by an animal	1	2	2	2	6	2	1	1%	1%
Other mechanisms	12	15	24	13	14	6	11	6%	5%
Total*	259	258	310	258	224	201	195	100%	100%

* The percentages shown in this table have been rounded to the nearest whole number, therefore the sum of percentage figures for each column may not equal the total.

The top four mechanisms accounted for almost two-thirds of work-related fatalities in 2015

Table 3 shows the profile of fatalities by mechanism is roughly similar across the age groups. The exception to this is the 65 years and over age group which had a lower proportion of fatalities due to vehicle collision (24 per cent compared with 37 per cent to 46 per cent for the other age groups) and slightly higher proportions due to being hit by moving objects and falls from a height.

This oldest age group also had considerably more in the other mechanisms category of which rollover of non-road vehicle was a major contributor.

Table 3: Worker fatalities: percentage by mechanism of incident and age group, 2003 to 2015 combined

Mechanism of incident	Less than 25	25-34	35-44	45-54	55-64	65 and over	Total
Vehicle collision	40%	42%	46%	41%	37%	24%	39%
Being hit by moving objects	12%	8%	10%	13%	14%	16%	12%
Falls from a height	8%	9%	8%	12%	14%	16%	11%
Being hit by falling objects	7%	9%	12%	7%	10%	9%	9%
Contact with electricity	9%	7%	4%	5%	2%	2%	4%
Other mechanisms	23%	24%	21%	22%	23%	33%	24%
Total*	100%	100%	100%	100%	100%	100%	100%

* The percentages shown in this table have been rounded to the nearest whole number, therefore the sum of percentage figures for each column may not equal the total.



Breakdown agency

The breakdown agency identifies the object, substance or circumstance principally involved at the point at which things started to go wrong.

Table 4 shows the breakdown agency of mobile plant and transport accounted for 61 per cent of fatalities over the 2003–15 period and 53 per cent of fatalities in 2015. Within this group, trucks, semi-trailers or lorries was the biggest contributor accounting for 18 per cent of all worker fatalities. This was followed by cars, station wagons, vans or utilities with 9 per cent and tractors with 4 per cent.

For the complete time series see Appendix A2.

Table 4: Worker fatalities: number and proportion by selected breakdown agencies*, 2003 to 2015 (selected years, sorted by total fatalities)

Breakdown agency	2003	2005	2007	2009	2011	2013	2015	Total	% of 2015 fatalities	% of total fatalities
Mobile plant and transport	161	151	192	167	132	123	103	1952	53%	61%
Road transport	99	100	139	110	72	73	54	1232	28%	38%
Trucks, semi-trailers, lorries	58	50	76	65	47	42	36	730	18%	23%
Cars, station wagons, vans, utilities	38	42	54	41	22	23	18	442	9%	14%
Other mobile plant	20	16	14	15	13	16	15	204	8%	6%
Tractors, agricultural or otherwise	13	13	7	13	9	12	7	149	4%	5%
Air transport	24	15	11	11	21	10	4	184	2%	6%
Self-propelled plant	8	10	11	11	9	6	14	136	7%	4%
Other transport	3	3	4	7	10	12	7	72	4%	2%
Water transport	4	6	4	9	4	4	5	69	3%	2%
Machinery and (mainly) fixed plant	23	32	29	31	32	24	17	342	9%	11%
Conveyors and lifting plant	13	20	18	16	22	17	9	198	5%	6%
Electrical installation	6	6	4	11	4	6	4	67	2%	2%
Environmental agencies	29	27	28	25	21	17	33	336	17%	10%
Non-powered handtools, appliances and equipment	13	11	24	13	8	14	18	204	9%	6%
Ladders, mobile ramps and stairways, and scaffolding	4	5	13	7	7	4	6	82	3%	3%
Animal, human and biological agencies	15	14	14	9	13	11	11	158	6%	5%
Live four-legged animals	4	6	6	4	7	6	4	71	2%	2%
Human agencies	10	6	6	4	4	4	7	65	4%	2%
Powered equipment, tools and appliances	8	6	10	8	7	4	6	94	3%	3%
Materials and substances	7	13	8	5	8	6	6	89	3%	3%
Chemicals and chemical products	2	4	3	..	3	2	1	29	1%	1%
Total*	259	258	310	258	224	201	195	3207	100%	100%

Note: Only selected breakdown agency subgroups and classes are included. Therefore the number of fatalities in the selected subcategories will not add to the category total.

* The total number of fatalities and percentage figures for each column shown in this table will not add to the total due to rounding and the inclusion of selected breakdown agency subgroups and classes within the major group headings.

Involvement of vehicles

Over the 2003 to 2015 period, 2081 (65 per cent) worker fatalities involved vehicles. Of these, almost half (49 per cent) occurred on a public road.

One-third (1022) of all worker fatalities arose from injuries that involved a vehicle on a public road, one-third (1059) involved a vehicle not on a public road and the remaining one-third (1126) did not involve a vehicle.

Table 5 shows 89 per cent of worker fatalities involving vehicles on public roads were the result of a vehicle collision. This was followed by being hit by moving objects which accounted for 8 per cent.

Table 5: Worker fatalities by vehicle involvement: number by public road status and mechanism of incident, 2003 to 2015 combined (sorted by total fatalities)

Mechanism of incident	Vehicle involved			No vehicle involved	Total
	On a public road	Not on a public road	Total		
Number of fatalities					
Vehicle collision	913	345	1258	..	1258
Being hit by moving objects	82	194	276	111	387
Rollover of non-road vehicle	10	127	137	..	137
Being trapped between stationary and moving objects	7	80	87	42	129
Being hit by falling objects	3	98	101	193	294
Falls from a height	2	69	71	288	359
Other mechanisms	5	146	151	492	643
Total	1022	1059	2081	1126	3207
Percentage of fatalities					
Vehicle collision	89%	33%	60%	..	39%
Being hit by moving objects	8%	18%	13%	10%	12%
Rollover of non-road vehicle	1%	12%	7%	..	4%
Being trapped between stationary and moving objects	1%	8%	4%	4%	4%
Being hit by falling objects	0%	9%	5%	17%	9%
Falls from a height	0%	7%	3%	26%	11%
Other mechanisms	0%	14%	7%	44%	20%
Total*	100%	100%	100%	100%	100%

* The percentages shown in this table have been rounded to the nearest whole number, therefore the sum of percentage figures for each column may not equal the total.

Over the 13 years, two-thirds of worker fatalities involved vehicles

Fatalities due to vehicle collisions

Table 6 shows in the 13 years from 2003 to 2015, 1258 workers died in a *vehicle collision*. This is an average of 97 workers each year, compared with the 53 recorded in 2015. Of these, almost two-thirds (64 per cent) involved a single vehicle.

Of all worker fatalities, one-quarter (25 per cent) involved a worker dying in a single vehicle collision, with 12 per cent in a heavy vehicle.

Table 6: Worker fatalities due to vehicle collision: number by breakdown agency, 2003 to 2015 (selected years, sorted by total fatalities)

Type of incident	2003	2005	2007	2009	2011	2013	2015	Total	% of total	% of all worker fatalities
Single vehicle collision	66	71	85	70	55	42	34	816	64%	25%
Heavy vehicle	27	33	46	33	25	20	16	374	30%	12%
Aircraft	22	14	10	9	19	10	5	174	9%	5%
Light vehicle	9	13	24	16	8	5	6	164	11%	5%
Quad bike	..	..	..	3	1	4	5	26	9%	1%
Motorbike	1	4	4	2	1	1	..	25	0%*	1%
Agriculture vehicle	4	2	..	2	..	1	..	19	0%*	1%
Watercraft	1	3	..	3	1	..	..	17	0%*	1%
Other single vehicle collision	2	2	1	2	..	1	2	17	4%	1%
Multi vehicle collision	42	32	44	42	23	27	19	442	36%	14%
Occupant in light vehicle killed in collision with a heavy vehicle	10	4	10	10	11	8	5	104	9%	3%
Two heavy vehicles	16	9	12	13	6	7	5	136	9%	4%
Two light vehicles	9	12	6	7	2	5	4	87	8%	3%
Occupant in a heavy vehicle killed in collision with light vehicle	1	2	4	7	3	4	2	43	4%	1%
Other multi-vehicle collision	6	5	12	5	1	3	3	72	6%	2%
Total worker fatalities due to vehicle collision*	108	103	129	112	78	69	53	1258	100%	39%

* The percentages shown in this table have been rounded to the nearest whole number, therefore the sum of percentage figures for each column may not equal the total.

Of all worker fatalities, one quarter involved a worker dying in a single vehicle collision

Fatalities due to being hit by moving objects

Over the 13 years from 2003 to 2015, 387 workers died as a result of being hit by moving objects, which amounted to 12 per cent of all worker fatalities over this period. In 2015, 27 workers died due to this mechanism. Table 7 shows more than two-thirds (270 fatalities) of these incidents involved mobile plant and transport. Over the 13 years, 142 workers died after being hit by a heavy vehicle (truck, semi-trailer, lorries) or a light vehicle (cars, station wagons, vans, utilities).

Table 7: Worker fatalities due to being hit by moving objects: number by breakdown agency, 2003 to 2015 (selected years, sorted by total fatalities)

Breakdown agency	2003	2005	2007	2009	2011	2013	2015	Total	% of total	% of all worker fatalities
Mobile plant and transport	26	21	27	23	16	16	17	270	70%	8%
Trucks, semi-trailers, lorries	6	4	5	9	6	5	3	80	21%	2%
Cars, station wagons, vans, utilities	7	7	12	4	4	5	2	62	16%	2%
Self-propelled plant	6	4	..	3	2	3	6	46	12%	1%
Tractors, agricultural or otherwise	4	1	2	3	2	1	3	37	10%	1%
Other mobile or transport	3	5	8	4	2	2	3	45	12%	1%
Machinery and (mainly) fixed plant	4	..	2	2	..	5	3	31	8%	1%
Non-powered handtools, appliances and equipment	2	3	2	1	1	2	1	30	8%	1%
Powered equipment, tools and appliances	5	1	3	3	..	..	3	25	6%	1%
Environmental agencies	1	..	1	2	1	..	2	10	3%	0%*
Materials and substances	2	2	1	..	1	..	..	10	3%	0%*
Chemicals and chemical products	..	2	..	..	..	1	..	7	2%	0%*
Animal, human and biological agencies	..	..	..	..	..	..	1	2	1%	0%*
Total*	40	29	38	31	19	24	27	387	100%	12%

*The total number of fatalities and percentage figures for each column shown in this table will not add to the total due to rounding and the inclusion of selected breakdown agency subgroups and classes within the major group headings.



Fatalities due to falls from a height

Over the 13 years from 2003 to 2015, 359 workers died following falls from a height, which amounted to 11 per cent of all worker fatalities. In 2015, 26 workers died due to this mechanism.

Table 8 shows over the past 13 years falls from a height most commonly involved falls from a roof (59 fatalities), ladders (54 fatalities), horses, donkeys and mules (33 fatalities) and trucks, semi-trailers and lorries (26 fatalities).

Table 8: Worker fatalities due to falls from a height: number by breakdown agency, 2003 to 2015 (selected years, sorted by total fatalities)

Breakdown agency	2003	2005	2007	2009	2011	2013	2015	Total	% of total	% of all worker
Environmental agencies	14	12	10	13	6	6	11	138	38%	4%
Roof	9	6	4	3	3	2	6	59	16%	2%
Buildings under construction or demolition	3	1	..	1	..	..	1	19	5%	1%
Internal building structures	..	..	1	1	..	..	..	6	2%	0%*
Openings in floors, walls or ceilings	..	..	..	..	2	..	1	6	2%	0%*
Non-powered handtools, appliances and equipment	5	5	12	6	7	4	6	87	24%	3%
Ladders	3	3	9	4	6	3	3	54	15%	2%
Scaffolding	1	2	2	2	1	..	2	16	4%	0%
Mobile plant and transport	2	4	1	3	5	7	4	59	16%	2%
Trucks, semi-trailers, lorries	2	2	..	3	2	3	2	26	7%	1%
Motorised craft	..	..	..	..	..	1	..	11	3%	0%*
Machinery and (mainly) fixed plant	3	2	5	5	2	3	2	40	11%	1%
Elevating work platforms	1	..	5	2	2	1	2	18	5%	1%
Animal, human and biological agencies	3	3	4	2	2	4	3	35	10%	1%
Horses, donkeys, mules	3	3	4	2	2	3	3	33	9%	1%
Total*	27	26	32	29	22	24	26	359	100%	11%

* The sum of the number of fatalities and percentage figures for each column may not equal the total due to rounding and the inclusion of selected subcategories in some breakdown agencies. The total also includes fatalities where the breakdown agency was unknown.

Over the 13 years from 2003 to 2015, 359 workers died following falls from a height

Fatalities due to being hit by falling objects

Over the 13 years from 2003 to 2015, 294 workers died due to being hit by falling objects, which amounted to 9 per cent of all worker fatalities. This mechanism claimed the lives of 21 workers in 2015.

Table 9 provides more detail on the object (agency) which hit the worker. Over the 13 years, 69 workers were killed by falling vegetation. This is 23 per cent of all workers who died as a result of being hit by falling objects and 2 per cent of all worker fatalities.

Table 9: Worker fatalities due to being hit by falling objects: number by agency, 2003 to 2015 (selected years, sorted by total fatalities)

Agency	2003	2005	2007	2009	2011	2013	2015	Total	% of total	% of all worker fatalities
Environmental agencies	7	11	8	2	16	8	3	100	34%	3%
Vegetation	5	10	5	2	12	6	2	69	23%	2%
Buildings and other structures	2	..	3	..	3	2	..	25	9%	1%
Materials and substances	3	5	4	7	4	7	5	81	28%	3%
Ferrous and non-ferrous metal	..	2	3	2	2	4	..	31	11%	1%
Mobile plant and transport	3	2	5	3	1	7	10	56	19%	2%
Trucks, semi-trailers, lorries	..	..	1	1	..	3	3	17	6%	1%
Cars, station wagons, vans, utilities	..	1	..	..	..	1	1	7	2%	0%*
Non-powered handtools, appliances and equipment	1	3	5	2	2	3	2	33	11%	1%
Storage equipment	..	2	..	1	1	1	1	12	4%	0%*
Machinery and (mainly) fixed plant	1	3	1	1	4	..	1	20	7%	1%
Cranes	1	1	..	..	2	..	..	6	2%	0%*
Powered equipment, tools and appliances	..	1	1	..	..	..	..	3	1%	0%*
Total*	15	25	24	15	27	25	21	294	100%	9%

Note: Only selected agency subgroups are included. Therefore the number of fatalities in the selected subcategories will not add to the category total.

*The total number of fatalities and percentage figures for each column shown in this table will not add to the total due to rounding and the inclusion of selected breakdown agency subgroups and classes within the major group headings.

21 workers died due to being hit by falling objects in 2015

Industry

Figure 4 shows in 2015, 47 per cent of the workers who died were employed either in the Agriculture, forestry and fishing (52 fatalities) or the Transport, postal and warehousing industries (40 fatalities).

Figure 4: Worker fatalities: proportion by industry of employer, all years (2003 to 2015 combined) and 2015

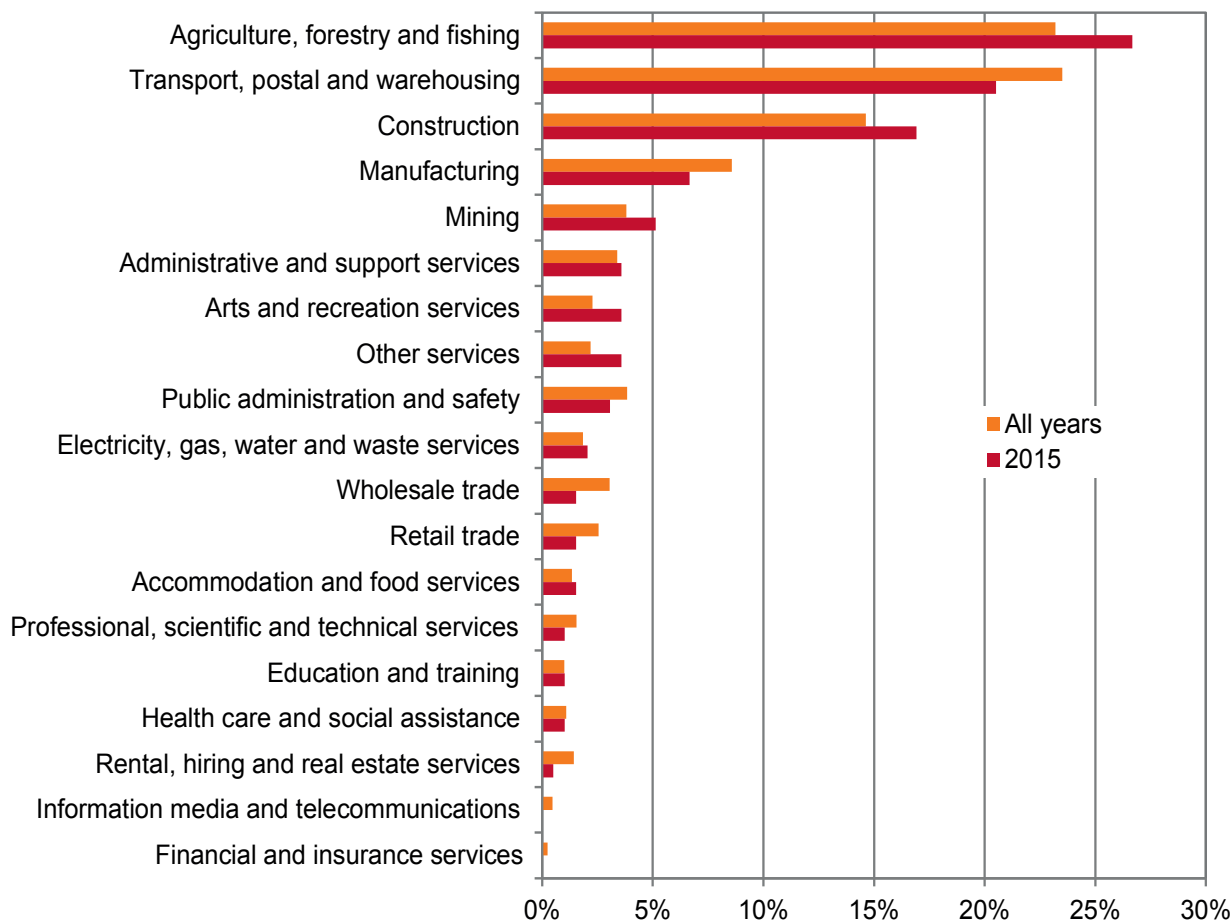


Table 10 shows the top four industries have had decreases in worker fatalities over the period from 2003 to 2015. The Agriculture, forestry and fishing industry recorded the highest proportion of fatalities in 2015 representing more than one quarter of all worker fatalities. For the complete time series see Appendix A3.

Table 10: Worker fatalities: number by industry of employer, 2003 to 2015 (selected years)

Industry of employer	2003	2005	2007	2009	2011	2013	2015	Total	% of 2015	% of all worker fatalities
Agriculture, forestry and fishing	60	62	52	62	59	52	52	744	27%	23%
Transport, postal and warehousing	68	55	83	64	48	46	40	754	21%	24%
Construction	43	30	45	36	41	22	33	469	17%	15%
Manufacturing	20	23	25	23	22	12	13	275	7%	9%
Mining	11	9	7	10	6	8	10	122	5%	4%
Administrative and support services	4	12	12	12	8	5	7	109	4%	3%
Arts and recreation services	3	6	10	1	6	7	7	73	4%	2%
Other services	4	10	4	4	4	7	7	70	4%	2%
Public administration and safety	9	14	13	11	11	11	6	123	3%	4%
Electricity, gas, water and waste services	5	6	4	5	2	4	4	59	2%	2%
Wholesale trade	7	11	8	4	3	8	3	98	2%	3%
Retail trade	7	7	17	5	2	8	3	82	2%	3%
Accommodation and food services	5	..	6	3	1	2	3	43	2%	1%
Professional, scientific and technical services	2	2	7	4	2	2	2	50	1%	2%
Education and training	2	2	4	2	2	..	2	32	1%	1%
Health care and social assistance	3	3	..	6	2	4	2	35	1%	1%
Rental, hiring and real estate services	4	6	10	2	2	3	1	46	1%	1%
Information media and telecommunications	1	..	3	1	3	..	..	15	0%*	0%*
Financial and insurance services	1	..	..	3	..	..	..	8	0%*	0%*
All industries*	259	258	310	258	224	201	195	3207	100%	100%

*The percentages shown in this table have been rounded to the nearest whole number, therefore the sum of percentage figures for each column may not equal the total.

Fatality rates, expressed as fatalities per 100 000 workers, are best used when comparing risk across industries. Table 11 shows in 2015 the Agriculture, forestry and fishing industry recorded the highest fatality rate with 16.7 fatalities per 100 000 workers. The fatality rate for this industry in 2015 is over 10 times the all industries fatality rate of 1.6.

It must be noted that fatality rates are sensitive to the number of workers employed in each industry, and therefore are liable to show volatility in those industries which employ the fewest workers even when small variations in the number of fatalities are recorded. Therefore, the actual number of fatalities should be considered when interpreting the fatality rates.

For the complete time series see Appendix A4.

Table 11: Worker fatalities: fatality rate (fatalities per 100 000 workers) by industry of employer, 2003 to 2015 (selected years)

Industry of employer	2003	2005	2007	2009	2011	2013	2015	Total
Agriculture, forestry and fishing	16.4	17.6	15.0	17.8	18.7	17.3	16.7	17.0
Transport, postal and warehousing	14.6	11.1	15.5	11.0	8.3	7.8	6.6	10.6
Construction	5.8	3.6	4.8	3.7	4.0	2.2	3.2	3.8
Manufacturing	1.9	2.3	2.4	2.3	2.3	1.3	1.5	2.2
Administrative and support services	1.2	3.4	3.4	3.4	2.0	1.3	1.7	2.3
Arts and recreation services	2.1	3.5	5.2	0.5	2.9	3.4	3.1	2.9
Public administration and safety	1.6	2.3	2.0	1.6	1.5	1.5	0.8	1.4
Mining	12.4	7.6	5.1	6.1	2.7	3.0	4.4	5.3
Wholesale trade	1.9	3.0	2.1	1.0	0.7	1.9	0.8	1.9
Retail trade	0.6	0.6	1.4	0.4	0.2	0.7	0.2	0.5
Health care and social assistance	0.3	0.3	..	0.5	0.2	0.3	0.1	0.2
Other services	0.9	2.5	0.9	0.9	0.9	1.5	1.5	1.2
Professional, scientific and technical services	0.3	0.3	0.9	0.5	0.2	0.2	0.2	0.5
Accommodation and food services	0.8	..	0.9	0.4	0.1	0.3	0.4	0.5
Information media and telecommunications	0.4	..	1.2	0.5	1.5	..	..	0.5
Electricity, gas, water and waste services	5.5	6.0	3.8	3.8	1.4	2.7	2.8	3.6
Rental, hiring and real estate services	2.4	3.4	5.0	1.1	1.0	1.5	0.5	1.8
Education and training	0.3	0.3	0.5	0.2	0.2	..	0.2	0.3
Financial and insurance services	0.3	..	..	0.8	..	..	..	0.2
All industries	2.7	2.6	3.0	2.4	2.0	1.7	1.6	2.3

In 2015 the Agriculture, forestry and fishing industry recorded the highest fatality rate with 16.7 fatalities per 100 000 workers

Priority industries

The *Australian Work Health and Safety Strategy 2012-2022* (Australian Strategy) provides a framework to drive improvements in work health and safety in Australia. It promotes a collaborative approach between the Commonwealth, state and territory governments, industry and unions and other organisations to achieve the vision of healthy, safe and productive working lives.

The Australian Strategy identifies national priority industries and disorders to help direct prevention activities to where they are needed the most.

The following industries have high numbers and rates of deaths and/or injuries or are by their nature hazardous:

- Agriculture
- Road transport
- Manufacturing
- Construction
- Accommodation and food services
- Public administration and safety, and
- Health care and social assistance.

For the purposes of this report, only those industries with fatality rates above the all industry rate will be examined in further detail, i.e. Agriculture, Road transport and Construction.

Industries such as Accommodation and food services, Health care and social assistance and Public administration and safety have low fatality rates but are included as priority industries due to high injury rates. For information on serious claims in these industries, refer to the latest *Australian Workers' Compensation Statistics*:

<http://www.safeworkaustralia.gov.au/sites/swa/statistics/workers-compensation-data/pages/compendiumofworkerscompensationstatistics>



Figure 5 shows that while fatality rates can be volatile over time, they have generally been decreasing for the selected priority industries over the last 13 years, apart from Agriculture where the rate has remained close to 15.0 for much of the period. Although the Road transport fatality rate has decreased over the period it is still over eight times the all industry rate (13.3 compared with 1.6).

Figure 5: Worker fatalities: fatality rate (fatalities per 100 000 workers) by industry of employer, 2003 to 2015

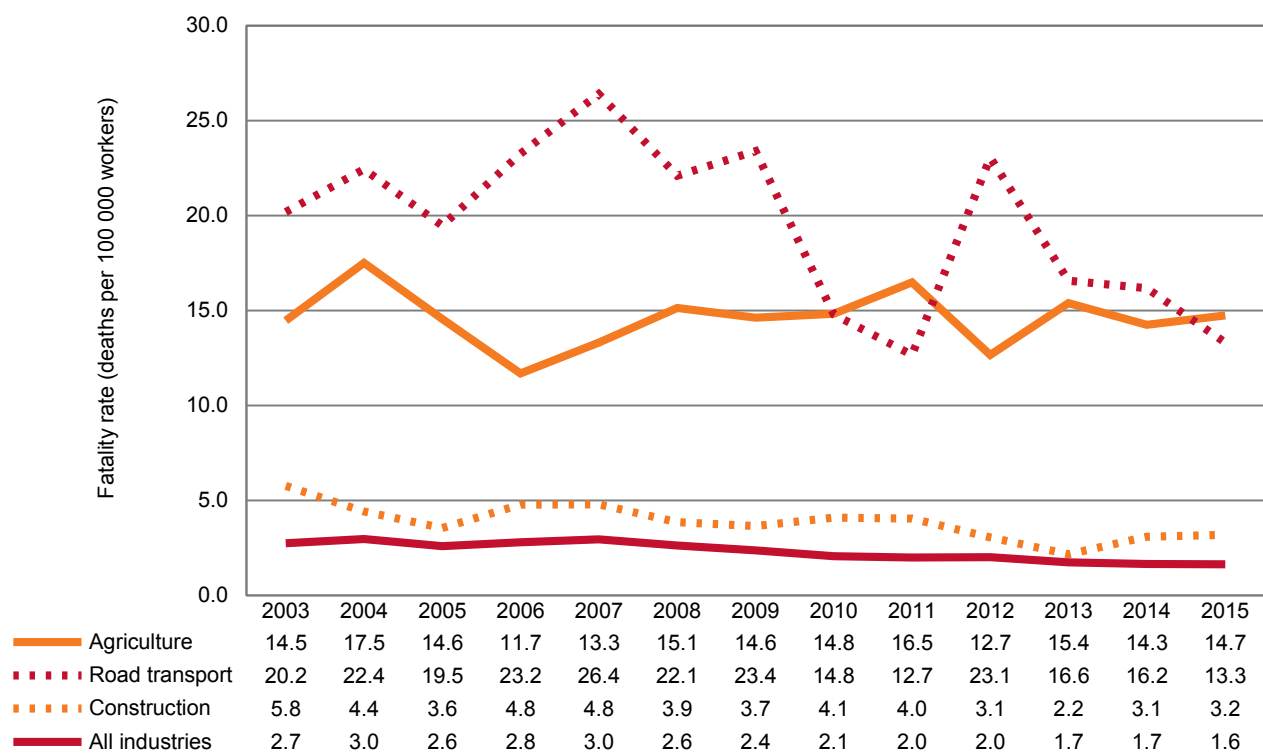


Table 12 shows the number of worker fatalities in Agriculture sub-divisions by mechanism of incident. Almost half (45 per cent of fatalities) of all worker fatalities in Agriculture are due to vehicle collisions and rollover of non-road vehicles, 160 and 87 fatalities, respectively.

Within the Agriculture industry, the Sheep, beef cattle and grain farming industry makes up more than two-thirds (68 per cent) of the number of fatalities (375 out of 555). Of these nearly half (42 per cent) involved vehicle collisions or rollover of non-road vehicles. In this group, the most common vehicles involved in these fatalities were tractors and quad bikes (38 fatalities each) and light vehicles and aircraft (29 fatalities each).

Further information on fatalities and injuries that occur on Australian farms can be found in the *Work-related injuries and fatalities on Australian farms* report:

<http://www.safeworkaustralia.gov.au/sites/SWA/about/Publications/Documents/759/Work-related-injuries-fatalities-farms.pdf>

Table 12: Worker fatalities: Agriculture sub-divisions by mechanism of incident, 2003 to 2015 (combined)

Industry sub-divisions	Vehicle collision	Rollover of non-road vehicle	Being hit by moving objects	Being hit by falling objects	Falls from a height	Being trapped between stationary and moving objects	Being hit by an animal	Other	Total
Sheep, beef cattle and grain farming	109	50	56	34	29	19	16	62	375
Other crop growing	13	10	7	7	..	4	3	8	52
Fruit and tree nut growing	5	10	5	1	3	6	4	3	37
Other livestock farming	13	8	7	1	3	..	1	4	37
Dairy cattle farming	13	5	2	..	..	1	1	3	25
Mushroom and vegetable growing	6	2	6	1	1	..	..	3	19
Nursery and floriculture production	1	1	1	2	..	1	..	1	7
Poultry farming	..	1	1	..	..	..	..	1	3
Agriculture total	160	87	85	46	36	31	25	85	555

Over the period from 2003 to 2015, 77 per cent (449 fatalities) of all road transport fatalities involved vehicle collisions, with the vast majority (93 per cent) occurring in the road freight transport industry.

Table 13: Worker fatalities: Road transport sub-divisions by mechanism of incident, 2003 to 2015 (combined)

Industry sub-divisions	Vehicle collision	Being hit by moving objects	Being hit by falling objects	Being trapped between stationary and moving objects	Falls from a height	Being trapped by moving machinery	Other	Total
Road freight transport	418	35	23	17	13	5	24	535
Road passenger transport	31	7	1	..	1	5	3	48
Taxi and other road transport	24	4	..	..	..	..	3	31
Urban bus transport (including tramway)	5	2	..	..	1	3	0	11
Interurban and rural bus transport	2	1	1	..	..	2	0	6
Total	449	42	24	17	14	10	27	583



Table 14 shows the mechanism with the highest number of worker fatalities in the Construction industry is falls from a height. These fatalities account for almost one-third (133 out of 469 fatalities) in the industry.

Within the Construction industry, Construction services recorded the highest number of fatalities with 309, of which 89 were due to falls from a height. Workers in this industry are involved in earthmoving and excavation, concreting, bricklaying, roofing, plumbing and electrical and carpentry services.

Building installation services recorded the highest number of fatalities from contact with electricity (38 fatalities). Workers in this industry are primarily involved with plumbing, electrical, heating and air conditioning installation.

For further information on fatalities and injuries refer to the *Work-related injuries and fatalities in Construction, 2003 to 2013* report:

<http://www.safeworkaustralia.gov.au/sites/SWA/about/Publications/Documents/926/fatalities-in-construction.pdf>

Table 14: Worker fatalities: Construction sub-divisions by mechanism of incident, 2003 to 2015 (combined)

Industry sub-division	Falls from a height	Vehicle collision	Contact with electricity	Being hit by moving objects	Being hit by falling objects	Being trapped between stationary and moving objects	Being trapped by moving machinery	Other	Total
Building construction	34	9	5	2	15	3	1	5	74
Non-residential building construction	10	5	1	1	7	2	1	1	28
Residential building construction	24	4	4	1	8	1	..	4	46
Construction services	89	44	57	28	31	16	15	29	309
Building completion services	26	2	3	3	4	3	1	1	43
Building installation services	15	12	38	1	..	1	..	5	72
Building structure services	35	6	12	4	7	4	2	6	76
Land development and site preparation services	5	12	1	15	15	8	11	10	77
Other construction services	8	12	3	5	5	..	1	7	41
Heavy and civil engineering construction	10	20	5	25	8	4	3	11	86
Construction total	133	73	67	55	54	23	19	45	469

Occupation

In 2015, 34 per cent (66 fatalities) of the workers killed were employed as machinery operators and drivers. Labourers accounted for a further 23 per cent (44 fatalities) of fatalities followed by managers (16 per cent – 32 fatalities) and technicians and trades workers (14 per cent – 28 fatalities). For the complete time series see Appendix A5.

Table 15: Worker fatalities: number of fatalities and fatality rate by occupation, 2003 to 2015 (selected years, sorted by 2015 fatalities)

Occupation	2003	2005	2007	2009	2011	2013	2015
Number of fatalities							
Machinery operators and drivers	86	76	112	95	61	63	66
Road and rail drivers	65	55	82	72	46	49	42
Mobile plant operators	11	8	17	12	7	6	16
Machine and stationary plant operators	7	11	7	9	8	7	8
Labourers	61	42	56	40	41	41	44
Farm, forestry and garden workers	22	15	16	12	16	11	20
Construction and mining labourers	24	12	13	11	12	8	9
Technicians and trades workers	31	43	55	37	43	29	28
Construction trades workers	10	6	17	13	8	3	10
Automotive and engineering trades workers	10	13	13	10	11	11	7
Electrotechnology and telecommunications trades workers	9	13	13	6	14	9	7
Managers	40	50	38	43	40	32	32
Farmers and farm managers	31	35	27	32	34	27	23
Professionals	19	24	24	20	25	12	10
Design, engineering, science and transport professionals	17	19	12	13	19	9	5
Community and personal service workers	11	12	10	14	10	14	8
Protective service workers	7	8	5	8	3	4	..
Sales workers	7	5	10	4	1	6	2
Clerical and administrative workers	4	6	5	5	3	1	2
Unknown	..	..	..	..	..	3	3
Total*	259	258	310	258	224	201	195
Fatality rate (deaths per 100 000 workers)							
Machinery operators and drivers	13.7	11.9	15.7	13.8	8.2	8.1	8.9
Road and rail drivers	24.9	20.7	28.6	25.0	14.8	15.2	13.0
Mobile plant operators	9.3	6.5	12.2	9.1	5.0	4.4	12.3
Machine and stationary plant operators	4.0	6.9	4.1	5.7	4.7	3.8	5.0
Labourers	5.6	3.8	4.9	3.5	3.6	3.6	3.9
Farm, forestry and garden workers	15.8	13.2	13.8	11.1	13.7	11.0	17.2
Construction and mining labourers	17.8	8.4	7.8	6.8	7.1	5.2	5.7
Technicians and trades workers	2.2	2.9	3.5	2.3	2.6	1.7	1.6
Construction trades workers	3.3	1.8	5.0	3.7	2.1	0.8	2.7
Automotive and engineering trades workers	3.0	3.8	3.7	2.8	3.1	3.0	1.8
Electrotechnology and telecommunications trades workers	4.6	7.0	6.1	2.8	6.4	4.0	2.9
Managers	3.5	4.0	2.8	3.1	2.8	2.2	2.1
Farmers and farm managers	15.7	17.7	13.7	15.9	20.2	17.2	13.8
Professionals	1.0	1.2	1.1	0.9	1.0	0.5	0.4
Design, engineering, science and transport professionals	6.9	6.5	3.9	3.8	5.0	2.3	1.3
Community and personal service workers	1.4	1.4	1.1	1.4	0.9	1.2	0.7
Protective service workers	5.9	6.5	4.1	6.1	2.2	2.7	..
Sales workers	0.7	0.5	1.0	0.4	0.1	0.6	0.2
Clerical and administrative workers	0.3	0.4	0.3	0.3	0.2	0.1	0.1
Total*	2.7	2.6	3.0	2.4	2.0	1.7	1.6

Note: Only selected subcategories are included. Therefore the number of fatalities in the selected subcategories will not add to the category total.

*Total includes occupations which are unknown, therefore the sum of figures for each column may not equal the total.

State/territory of fatality

The most populous states accounted for the majority of fatalities over the 13 years of the series. New South Wales accounted for 30 per cent of the worker fatalities followed by Queensland with 25 per cent and Victoria with 20 per cent.

Table 16 shows in 2015, 60 workers were killed in New South Wales, 49 in Queensland, 35 in Western Australia and 34 in Victoria.

Table 16: Worker fatalities: number and fatality rate by state/territory of incident, 2003 to 2015 (sorted by total fatalities)

State	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Total
Number of worker fatalities														
New South Wales	85	75	91	95	86	83	63	67	58	82	55	58	60	958
Queensland	57	58	70	61	78	77	69	49	61	57	53	50	49	789
Victoria	54	67	42	67	69	47	51	47	46	35	32	42	34	633
Western Australia	28	36	23	23	45	43	33	31	24	24	33	22	35	400
South Australia	13	19	18	20	10	15	19	20	18	13	15	10	10	200
Tasmania	17	13	8	10	11	9	15	7	9	6	8	8	6	127
Northern Territory	4	13	5	6	10	9	6	6	7	9	4	4	1	84
Australian Capital Territory	1	3	1	2	1	..	2	1	1	3	1	..	..	16
Total	259	284	258	284	310	283	258	228	224	229	201	194	195	3207
Fatality rate (deaths per 100 000 workers)														
New South Wales	2.7	2.4	2.9	2.9	2.6	2.5	1.9	1.9	1.7	2.3	1.5	1.6	1.6	2.2
Queensland	3.2	3.1	3.6	3.0	3.7	3.5	3.1	2.2	2.7	2.5	2.3	2.2	2.1	2.8
Victoria	2.3	2.8	1.7	2.7	2.7	1.8	1.9	1.7	1.6	1.2	1.1	1.5	1.1	1.8
Western Australia	2.9	3.7	2.2	2.1	4.0	3.7	2.8	2.6	1.9	1.8	2.5	1.6	2.6	2.6
South Australia	1.8	2.7	2.4	2.7	1.3	1.9	2.4	2.5	2.2	1.6	1.9	1.2	1.2	2.0
Tasmania	8.2	6.1	3.6	4.5	4.8	3.8	6.4	2.9	3.8	2.6	3.5	3.4	2.5	4.3
Northern Territory	4.1	13.3	5.2	6.0	9.3	8.1	5.0	5.0	5.8	7.1	3.1	3.0	0.8	5.6
Australian Capital Territory	0.6	1.7	0.5	1.0	0.5	..	1.0	0.5	0.5	1.4	0.5	..	..	0.6
Total	2.7	3.0	2.6	2.8	3.0	2.6	2.4	2.1	2.0	2.0	1.7	1.7	1.6	2.6

State/territory by industry

Table 17 shows the industries which had the highest numbers of fatalities in each state or territory over the 13 years from 2003 to 2015. The analysis excludes the Australian Capital Territory due to the small numbers of fatalities involved.

Transport, postal and warehousing accounted for the largest number of fatalities in New South Wales, Victoria and Western Australia whereas Agriculture, forestry and fishing accounted for the most fatalities in Queensland, South Australia, Tasmania and the Northern Territory.

Table 17: Worker fatalities: number and percentage by state/territory of incident and the industries with the highest number of fatalities, 2003 to 2015 combined

Industry	New South Wales	Victoria	Queensland	Western Australia	South Australia	Tasmania	Northern Territory	Total*
Number of worker fatalities								
Transport, postal and warehousing	246	159	189	82	42	20	15	754
Agriculture, forestry and fishing	194	146	193	81	50	50	28	744
Construction	141	91	129	48	31	15	9	469
Manufacturing	91	57	55	48	14	9	1	275
Public administration and safety	36	26	31	12	7	6	4	123
Mining	17	9	33	40	14	6	3	122
Administrative and support services	32	21	27	17	7	1	3	109
Wholesale trade	39	20	20	9	6	2	2	98
Retail trade	36	18	13	9	3	2	1	82
Arts and recreation services	23	7	25	10	4	1	2	73
Other industries	103	79	74	44	22	15	16	358
Total	958	633	789	400	200	127	84	3207
Percentage of worker fatalities								
Transport, postal and warehousing	26%	25%	24%	21%	21%	16%	18%	24%
Agriculture, forestry and fishing	20%	23%	24%	20%	25%	39%	33%	23%
Construction	15%	14%	16%	12%	16%	12%	11%	15%
Manufacturing	9%	9%	7%	12%	7%	7%	1%	9%
Public administration and safety	4%	4%	4%	3%	4%	5%	5%	4%
Mining	2%	1%	4%	10%	7%	5%	4%	4%
Administrative and support services	3%	3%	3%	4%	4%	1%	4%	3%
Wholesale trade	4%	3%	3%	2%	3%	2%	2%	3%
Retail trade	4%	3%	2%	2%	2%	2%	1%	3%
Arts and recreation services	2%	1%	3%	3%	2%	1%	2%	2%
Other industries	11%	12%	9%	11%	11%	12%	19%	11%
Total**	100%	100%	100%	100%	100%	100%	100%	100%

* includes Australian Capital Territory.

** The percentages shown in this table have been rounded to the nearest whole number, therefore the sum of percentage figures for each column may not equal the total

Bystander fatalities

The actions of a worker or a fault in a workplace resulted in the deaths of 49 members of the public in 2015. This is the lowest number of members of the public killed over the 13 years of the series.

Over the 13 years of the series, 59 per cent of the bystander fatalities were male and 64 per cent involved an incident on a public road.

Age group

Table 18 shows over the 13 years of the series, the oldest (65 years and over) and youngest (14 and under) age groups accounted for the highest proportion of bystander fatalities, 22 per cent and 18 per cent respectively.

Table 18: Bystander fatalities: numbers and proportions by age group, 2003 to 2015 (selected years)

Age group	2003	2005	2007	2009	2011	2013	2015	Total	% of total
14 and under	8	10	21	13	2	10	6	147	18%
15-24	8	9	9	15	5	7	3	94	12%
25-34	9	10	11	6	9	12	7	103	13%
35-44	4	7	6	6	4	6	6	90	11%
45-54	10	5	12	4	8	9	8	97	12%
55-64	10	11	3	6	8	10	10	99	12%
65 and over	8	13	13	3	27	12	9	173	22%
Total*	57	65	75	53	63	66	49	803	100%

* The percentages shown in this table have been rounded to the nearest whole number, therefore the sum of percentage figures for each column may not equal the total.



Mechanism of fatality

Table 19 shows over the 2003–15 period 60 per cent of the bystander fatalities were due to a vehicle collision, with being hit by moving objects accounting for a further 16 per cent.

Falls from a height accounted for 7 per cent of bystander fatalities, and drowning 4 per cent (36 fatalities). The majority (58 per cent) of the deaths from drowning were of children aged 14 years and under.

Table 19: Bystander fatalities: number by mechanism of incident and breakdown agency, 2003 to 2015 (selected years, sorted by 2015 fatalities)

Mechanism of incident	2003	2005	2007	2009	2011	2013	2015	Total	% of total
Vehicle collision	38	37	50	32	24	42	30	480	60%
Being hit by moving objects	7	15	9	5	15	8	8	129	16%
Falls from a height	2	3	2	6	3	4	3	54	7%
Drowning	1	5	5	3	1	..	5	36	4%
Being hit by falling objects	2	2	5	..	3	6	2	34	4%
Contact with hot objects	2	1	..	..	13	..	..	17	2%
Being assaulted by a person or persons	1	..	..	1	2	1	..	9	1%
Falls on the same level	..	..	1	2	..	2	1	7	1%
Being trapped by moving machinery	1	..	..	1	..	1	..	7	1%
Rollover of non-road vehicle	1	1	..	1	..	1	..	5	1%
Other mechanisms	2	1	3	2	2	1	0	25	3%
Total*	57	65	75	53	63	66	49	803	100%

* The percentages shown in this table have been rounded to the nearest whole number, therefore the sum of percentage figures for each column may not equal the total.



Glossary

Being hit by moving objects	Part of the Mechanism classification used to describe the action of an object hitting a person. This includes pedestrians hit by vehicles as well as being hit by other moving equipment or objects.
Breakdown agency	A part of the TOOCS classification which identified the object, substance or circumstance principally involved at the point at which things started to go wrong.
Bystander fatality	<p>The death of a person who dies from injuries sustained as a result of another person's work activity and who was not engaged in a work activity of their own at the time of the injury.</p> <p>A traffic incident death is only classified as a bystander fatality when attributable to someone else's work activity. Typically, this means the driver of a work vehicle is at fault. Cases where fault could not be determined with sufficient confidence are excluded.</p>
Contributing family workers	A person who works without pay, in an economic enterprise operated by a relative.
Employed person	The denominators used in calculating fatality rates in this report are based on ABS estimates of Employed persons, as defined in Labour force, Australia (ABS cat no 6202.0). This population includes Employees (who work for an employer); self-employed persons (regardless of whether they employ others or not); and those who work without pay for a family business or farm. It excludes persons whose only work is voluntary.
Employee	A person who works for a public or private employer and receives remuneration in wages, salary, a retainer fee from their employer while working on a commission basis, tips, piece-rates, or payment in kind; or a person who operates his or her own incorporated enterprise with or without hiring employees.
Fatality rate	The number killed as a result of work-related injury expressed as a per-capita rate against the population at risk of work-related injury. In this report the rate is expressed as the number of fatalities per 100 000 Employed persons: for brevity this is usually expressed as 'fatalities per 100 000 workers'. See Paragraph 4 of the Explanatory notes for further details.
Industry	A grouping of businesses that carry out similar economic activities. Fatalities data in this publication have been coded to the Australian and New Zealand Standard Industrial Classification (ANZSIC) 2006 (ABS cat. no. 1292.0) and unless specified are shown at the industry division level.
Injury	A condition coded to 'External causes of morbidity and mortality' and 'Injury, poisoning and certain other consequences of external causes' in the International Statistical Classification of Diseases and Related Health Problems, Tenth Revision, Australian Modification (ICD-10-AM).
Job	A set of tasks designed to be performed by one person for an employer (including self-employment) in return for payment or profit.
Mechanism of incident	The action, exposure or event that best describes the circumstances that resulted in the most serious injury.

Non-public road incident	An incident involving a vehicle that occurred at a worksite, on a private road or a public area that is not a public road. These incidents include plane crashes and incidents involving watercraft as well as vehicle crashes on farming properties.
Occupation	A set of jobs with similar sets of tasks. Fatalities data in this publication have been coded to the Australian and New Zealand Standard Classification of Occupations (ANZSCO) (ABS cat. no. 1220.0) First edition and unless specified are shown at the major group level.
Public road incident	A collision on a public road between any vehicle or self-propelled plant and anything else including a pedestrian. Incidents involving vehicles at worksites or on private roads are excluded. Public road incidents can be due to a Vehicle collision or being hit by a vehicle (which is included in the Mechanism of Being hit by moving objects). Vehicles that are caught in bush fires or hit by falling trees while on public roads are not classed as public road incidents as they do not involve a collision.
Rollover of non-road vehicle	Part of the Mechanism classification used to identify when a vehicle that is not normally a road vehicle overturns. This includes tractors and quad bikes being used on farm properties.
Self-employed	Includes both owner managers and employers. An owner manager is a person who works in his/her own business, with or without employees, whether or not the business is of limited liability. An employer is a person who operates his/her own unincorporated economic enterprise or engages independently in a profession or trade, and hires one or more employees.
Type of occurrence classification system (TOOCS)	<p>A suite of four classifications to code the way an injury occurred, comprising:</p> <ul style="list-style-type: none"> • the Nature of injury/disease classification • the Bodily location of injury/disease classification • the Mechanism of incident classification, and • the Agency of injury/disease classification. <p>Version 3.1 is used for coding the data presented in this report. Fatalities are only coded by Mechanism and Agency.</p>
Vehicle collision	Part of the Mechanism of incident classification that identifies fatalities that occurred due to a vehicle crash and where the occupant of the vehicle was killed. In the classification, this category is called Vehicle Incident but has been renamed to assist with reader understanding. Vehicle collisions that occur on public roads are further classified as a public road incidents and do not include people hit by a vehicle, which are coded to Being hit by moving objects. Vehicles not only include cars and trucks but also include other motorised equipment such as aircraft, boats, loaders, tractors and quad bikes.
Volunteer	Persons who undertake voluntary work through or for an organisation or group are included in the worker counts where that organisation or group is a business enterprise. It does not include sporting organisations or caring activities.
Worker fatality	The death of a person who dies from injuries sustained while at work, including those workers whose injury was caused by another's work activity. Workers include employees, self-employed persons, volunteers and contributing family workers.

Appendices

Appendix A1: Worker fatalities: number by mechanism of incident, 2003 to 2015 (sorted by total fatalities)

Mechanism of incident	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Total	% of 2015*	% of total*
Vehicle collision	108	121	103	124	129	121	112	78	78	91	69	71	53	1258	27%	39%
Being hit by moving objects	40	37	29	32	38	32	31	28	19	28	24	22	27	387	14%	12%
Falls from a height	27	25	26	39	32	30	29	27	22	30	24	22	26	359	13%	11%
Being hit by falling objects	15	21	25	25	24	23	15	29	27	27	25	17	21	294	11%	9%
Contact with electricity	13	16	13	18	13	9	13	10	10	6	8	5	8	142	4%	4%
Rollover of non-road vehicle	9	13	11	6	12	11	12	11	11	6	15	7	13	137	7%	4%
Being trapped by moving machinery	6	9	11	7	11	13	11	12	13	9	10	11	9	132	5%	4%
Being trapped between stationary and moving objects	9	13	12	12	11	8	7	8	13	5	7	12	12	129	6%	4%
Being assaulted by a person or persons	12	9	7	5	8	3	4	4	3	6	6	4	4	75	2%	2%
Drowning	4	3	2	2	5	9	8	2	3	3	4	1	5	51	3%	2%
Explosion	3	1	2	1	1	7	1	3	5	2	1	6	5	38	3%	1%
Being hit by an animal	1	3	2	1	2	3	2	3	6	4	2	1	1	31	1%	1%
Falls on the same level	3	5	1	1	4	4	2	2	..	3	..	1	1	27	1%	1%
Contact with hot objects	1	..	2	1	7	3	..	1	3	1	1	4	3	27	2%	1%
Slide or cave-in	1	2	4	3	1	..	1	1	2	1	..	5	1	22	1%	1%
Exposure to environmental heat	1	1	..	1	3	..	2	1	2	1	2	1	3	18	2%	1%
Single contact with chemical or substance	3	..	..	1	3	1	1	2	2	2	..	2	..	17	0%*	1%
Hitting stationary objects	..	1	1	..	1	..	1	2	1	2	2	..	2	13	1%	0%*
Being bitten by an animal	1	1	3	2	..	..	..	1	2	2	..	..	..	12	0%*	0%*
Hitting moving objects	..	1	3	..	3	3	1	..	..	..	..	..	..	11	0%*	0%*
Insect and spider bites and stings	..	1	..	..	2	3	1	1	..	..	1	1	..	10	0%*	0%*
Being hit by a person accidentally	..	..	..	..	..	..	2	2	2	..	..	..	..	6	0%*	0%*
Other and multiple mechanisms of injury	1	..	1	..	..	..	1	..	..	..	..	..	..	3	0%*	0%*
Other variations in pressure	..	1	..	2	..	..	..	..	..	..	..	..	..	3	0%*	0%*
Exposure to other and unspecified environmental factors	..	..	..	..	..	..	1	..	..	..	..	1	1	3	1%	0%*
Unspecified mechanisms of injury	1	..	..	..	..	..	..	..	..	..	..	..	..	1	0%*	0%*
Contact with poisonous parts of plant or marine life	..	..	..	1	..	..	..	..	..	..	..	..	..	1	0%*	0%*
Total*	259	284	258	284	310	283	258	228	224	229	201	194	195	3207	100%	100%

* The percentages shown in this table have been rounded to the nearest whole number, therefore the sum of percentage figures for each column may not equal the total.

Appendix A2: Worker fatalities: number and proportion by breakdown agency, 2003 to 2015 (sorted by total fatalities)

Breakdown agency	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Total	% of 2015	% of total
Mobile plant and transport	161	180	151	172	192	184	167	133	132	142	123	112	103	1952	53%	61%
Road transport	99	114	100	112	139	115	110	84	72	91	73	69	54	1232	28%	38%
Trucks, semi-trailers, lorries	58	72	50	66	76	67	65	47	47	55	42	49	36	730	18%	23%
Cars, station wagons, vans, utilities	38	36	42	43	54	36	41	35	22	35	23	19	18	442	9%	14%
Air transport	24	12	15	21	11	19	11	14	21	13	10	9	4	184	2%	6%
Industrial aircraft	9	7	4	11	7	13	11	13	10	12	9	3	4	113	2%	4%
Passenger aircraft	15	4	11	10	4	6	..	1	10	1	1	6	..	69	0%	2%
Self-propelled plant	8	12	10	10	11	14	11	8	9	13	6	10	14	136	7%	4%
Front-end loaders, log handling plant, other loading plant	..	5	5	4	5	4	1	1	2	6	2	3	4	42	2%	1%
Excavators, backhoes, other digging plant	3	3	1	2	2	1	3	3	4	3	1	2	4	32	2%	1%
Graders, dozers, snowploughs, other scraping plant	3	1	2	2	1	5	1	2	1	..	1	2	3	24	2%	1%
Other mobile plant	20	23	16	15	14	15	15	16	13	12	16	14	15	204	8%	6%
Tractors, agricultural or otherwise	13	22	13	13	7	11	13	13	9	6	12	10	7	149	4%	5%
Water transport	4	9	6	4	4	11	9	4	4	4	4	1	5	69	3%	2%
Other transport	3	4	3	3	4	8	7	1	10	4	12	6	7	72	4%	2%
All terrain vehicle (atv)	3	4	3	2	4	8	6	1	10	4	12	6	7	70	4%	2%
Machinery and (mainly) fixed plant	23	27	32	30	29	29	31	25	32	22	24	21	17	342	9%	11%
Conveyors and lifting plant	13	10	20	18	18	17	16	14	22	12	17	12	9	198	5%	6%
Forklift trucks	4	4	6	9	5	8	3	8	4	2	6	5	4	68	2%	2%
Power hoists	2	3	3	1	9	6	6	4	8	3	4	3	2	54	1%	2%
Cranes	5	1	7	4	3	2	5	..	7	4	6	2	1	47	1%	1%
Electrical installation	6	6	6	5	4	5	11	5	4	3	6	2	4	67	2%	2%
Environmental agencies	29	28	27	29	28	20	25	20	21	32	17	27	33	336	17%	10%
Buildings and other structures	16	12	9	14	7	8	10	6	4	12	5	8	7	118	4%	4%
Buildings under construction or demolition	3	5	1	6	..	2	1	1	1	2	1	1	1	25	1%	1%
Roof	9	2	6	5	5	5	3	1	3	8	3	5	6	61	3%	2%
Vegetation	3	6	11	5	6	3	3	6	6	6	7	2	5	69	3%	2%
Non-powered handtools, appliances and equipment	13	17	11	20	24	22	13	23	8	8	14	13	18	204	9%	6%
Ladders, mobile ramps and stairways, and scaffolding	4	3	5	7	13	9	7	11	7	2	4	4	6	82	3%	3%
Ladders	3	3	3	5	10	4	4	9	6	1	3	3	3	57	2%	2%
Scaffolding	1	..	2	..	3	5	3	2	1	1	1	..	2	21	1%	1%
Animal, human and biological agencies	15	15	14	14	14	12	9	11	13	10	11	9	11	158	6%	5%
Live four-legged animals	4	6	6	6	6	5	4	7	7	5	6	5	4	71	2%	2%
Horses, donkeys, mules	3	3	4	5	4	3	3	3	3	1	3	5	3	43	2%	1%
Cows, steers, cattle, bulls, buffalo	1	2	..	1	1	2	1	3	3	3	2	..	1	20	1%	1%
Human agencies	10	7	6	5	6	4	4	2	4	3	4	3	7	65	4%	2%
Other person	8	6	5	5	6	3	4	2	4	3	4	3	3	56	2%	2%
Powered equipment, tools and appliances	8	7	6	12	10	8	8	10	7	6	4	2	6	94	3%	3%
Materials and substances	7	10	13	4	8	6	5	2	8	7	6	7	6	89	3%	3%
Chemicals and chemical products	2	..	4	3	3	2	..	4	3	2	2	3	1	29	1%	1%
Total*	259	284	258	284	310	283	258	228	224	229	201	194	195	3207	100%	100%

Note: Only selected breakdown agency subgroups and classes are included. Therefore the number of fatalities in the selected subcategories will not add to the category total.

* The total number of fatalities and percentage figures for each column shown in this table will not add to the total due to rounding and the inclusion of selected breakdown agency subgroups and classes within the major group headings.

Appendix A3: Worker fatalities: number by industry of employer, 2003 to 2015 (sorted by total fatalities)

Industry of employer	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Total	% of 2015*	% of total*
Transport, postal and warehousing	68	66	55	62	83	71	64	44	48	61	46	46	40	754	21%	24%
Road transport	45	50	41	52	62	52	56	32	29	52	39	39	34	583	17%	18%
<i>Road freight transport</i>	40	47	37	47	58	50	51	31	25	45	34	36	34	535	17%	17%
Agriculture, forestry and fishing	60	77	62	46	52	69	62	55	59	53	52	45	52	744	27%	23%
Agriculture	46	54	44	35	40	45	45	46	45	35	40	40	40	555	21%	17%
Construction	43	35	30	43	45	38	36	41	41	30	22	32	33	469	17%	15%
Manufacturing	20	23	23	29	25	30	23	21	22	18	12	16	13	275	7%	9%
Public administration and safety	9	11	14	13	13	4	11	6	11	8	11	6	6	123	3%	4%
Mining ^a	11	11	9	15	7	12	10	5	6	8	8	10	10	122	5%	4%
Administrative and support services	4	9	12	8	12	10	12	12	8	6	5	4	7	109	4%	3%
Wholesale trade	7	10	11	8	8	11	4	10	3	9	8	6	3	98	2%	3%
Retail trade	7	5	7	10	17	6	5	7	2	5	8	..	3	82	2%	3%
Arts and recreation services	3	5	6	5	10	3	1	5	6	5	7	10	7	73	4%	2%
Other services	4	7	10	7	4	7	4	2	4	3	7	4	7	70	4%	2%
Electricity, gas, water and waste services	5	8	6	8	4	4	5	1	2	3	4	5	4	59	2%	2%
Professional, scientific and technical services	2	6	2	6	7	5	4	4	2	8	2	..	2	50	1%	2%
Rental, hiring and real estate services	4	2	6	4	10	4	2	4	2	3	3	1	1	46	1%	1%
Accommodation and food services	5	4	..	8	6	2	3	2	1	1	2	6	3	43	2%	1%
Health care and social assistance	3	3	3	2	..	2	6	4	2	2	4	2	2	35	1%	1%
Education and training	2	1	2	8	4	2	2	2	2	4	..	1	2	32	1%	1%
Information media and telecommunications	1	1	..	1	3	..	1	3	3	2	..	..	..	15	0%*	0%*
Financial and insurance services	1	..	..	1	..	3	3	..	..	..	..	..	..	8	0%*	0%*
Total*	259	284	258	284	310	283	258	228	224	229	201	194	195	3207	100%	100%

^a Mining fatalities include those that occur in coal and metal ore mining, oil and gas extraction, sand and gravel quarrying, exploration and support services.

Note: Only selected industry subdivisions and groups are included. Therefore the number of fatalities in the selected subdivisions and groups will not add to the category total.

* The total number of fatalities and percentage figures for each column shown in this table will not equal the total due to rounding and the inclusion of selected subdivisions and groups within an industry division.

Appendix A4: Worker fatalities: fatality rate (fatalities per 100 000 workers) by industry of employer, 2003 to 2015 (sorted by total fatality rates)

Industry of employer	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Total
Agriculture, forestry and fishing	16.4	21.6	17.6	13.4	15.0	20.0	17.8	15.5	18.7	16.7	17.3	13.9	16.7	17.0
Agriculture	14.5	17.5	14.6	11.7	13.3	15.1	14.6	14.8	16.5	12.7	15.4	14.3	14.7	14.6
Transport, postal and warehousing	14.6	13.7	11.1	12.4	15.5	12.5	11.0	7.7	8.3	10.9	7.8	7.8	6.6	10.6
Road transport	20.2	22.4	19.5	23.2	26.4	22.1	23.4	14.8	12.7	23.1	16.6	16.2	13.3	19.5
<i>Road freight transport</i>	<i>26.1</i>	<i>32.0</i>	<i>27.3</i>	<i>32.0</i>	<i>38.0</i>	<i>29.1</i>	<i>30.0</i>	<i>19.6</i>	<i>15.6</i>	<i>29.0</i>	<i>20.7</i>	<i>21.0</i>	<i>18.4</i>	<i>25.8</i>
Mining ^a	12.4	11.0	7.6	11.4	5.1	7.3	6.1	2.7	2.7	3.0	3.0	3.9	4.4	5.3
Construction	5.8	4.4	3.6	4.8	4.8	3.9	3.7	4.1	4.0	3.1	2.2	3.1	3.2	3.8
Electricity, gas, water and waste services	5.5	8.8	6.0	7.6	3.8	3.3	3.8	0.7	1.4	2.0	2.7	3.4	2.8	3.6
Arts and recreation services	2.1	3.2	3.5	2.9	5.2	1.6	0.5	2.6	2.9	2.4	3.4	4.9	3.1	3.0
Administrative and support services	1.2	2.7	3.4	2.3	3.4	2.9	3.4	3.1	2.0	1.5	1.3	1.0	1.7	2.3
Manufacturing	1.9	2.2	2.3	2.9	2.4	2.9	2.3	2.1	2.3	1.9	1.3	1.7	1.5	2.2
Wholesale trade	1.9	2.6	3.0	2.0	2.1	2.7	1.0	2.4	0.7	2.2	1.9	1.5	0.8	1.9
Rental, hiring and real estate services	2.4	1.1	3.4	2.1	5.0	2.0	1.1	2.1	1.0	1.4	1.5	0.5	0.5	1.8
Public administration and safety	1.6	1.9	2.3	2.1	2.0	0.6	1.6	0.9	1.5	1.1	1.5	0.8	0.8	1.4
Other services*	0.9	1.7	2.5	1.7	0.9	1.5	0.9	0.4	0.9	0.7	1.5	0.8	1.5	1.2
Retail trade*	0.6	0.5	0.6	0.9	1.4	0.5	0.4	0.6	0.2	0.4	0.7	..	0.2	0.5
Information media and telecommunications*	0.4	0.5	..	0.4	1.2	..	0.5	1.4	1.5	0.9	..	..	..	0.5
Professional, scientific and technical services*	0.3	1.0	0.3	0.8	0.9	0.6	0.5	0.5	0.2	0.9	0.2	..	0.2	0.5
Accommodation and food services*	0.8	0.6	..	1.2	0.9	0.3	0.4	0.3	0.1	0.1	0.3	0.8	0.4	0.5
Education and training*	0.3	0.1	0.3	1.1	0.5	0.2	0.2	0.2	0.2	0.5	..	0.1	0.2	0.3
Health care and social assistance*	0.3	0.3	0.3	0.2	..	0.2	0.5	0.3	0.2	0.1	0.3	0.1	0.1	0.2
Financial and insurance services*	0.3	..	..	0.3	..	0.7	0.8	..	..	..	..	..	..	0.2
Total*	2.7	3.0	2.6	2.8	3.0	2.6	2.4	2.1	2.0	2.0	1.7	1.7	1.6	2.3

^a Mining fatalities include those that occur in coal and metal ore mining, oil and gas extraction, sand and gravel quarrying, exploration and support services.

* Movements in fatality rates in industries with 5 or fewer fatalities each year should be viewed with caution.

Appendix A5: Worker fatalities: number by occupation, 2003 to 2015 (sorted by total fatalities)

Occupation	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Total	% of 2015*	% of total*
Machinery operators and drivers	86	91	76	89	112	94	95	64	61	78	63	66	66	1041	34%	32%
Road and rail drivers	65	71	55	69	82	67	72	47	46	62	49	48	42	775	22%	24%
Mobile plant operators	11	8	8	10	17	9	12	8	7	8	6	6	16	126	8%	4%
Machine and stationary plant operators	7	8	11	9	7	15	9	7	8	5	7	12	8	113	4%	4%
Labourers	61	60	42	52	56	65	40	51	41	48	41	50	44	651	23%	20%
Farm, forestry and garden workers	22	26	15	13	16	33	12	22	16	16	11	23	20	245	10%	8%
Construction and mining labourers	24	10	12	14	13	15	11	11	12	14	8	9	9	162	5%	5%
Professionals	19	15	24	25	24	21	20	24	25	22	12	11	10	252	5%	8%
Design, engineering, science and transport professionals	17	12	19	17	12	16	13	13	19	15	9	9	5	176	3%	5%
Managers	40	48	50	42	38	34	43	34	40	37	32	19	32	489	16%	15%
Farmers and farm managers	31	35	35	27	27	24	32	27	34	25	27	16	23	363	12%	11%
Technicians and trades workers	31	49	43	53	55	46	37	40	43	27	29	28	28	509	14%	16%
Construction trades workers	10	13	6	15	17	11	13	12	8	11	3	10	10	139	5%	4%
Automotive and engineering trades workers	10	15	13	12	13	16	10	10	11	4	11	7	7	139	4%	4%
Electrotechnology and telecommunications trades workers	9	11	13	11	13	9	6	8	14	6	9	7	7	123	4%	4%
Community and personal service workers	11	16	12	14	10	8	14	8	10	9	14	11	8	145	4%	5%
Protective service workers	7	6	8	7	5	3	8	4	3	7	4	3	..	65	0%*	2%
Sales workers	7	4	5	7	10	7	4	5	1	3	6	2	2	63	1%	2%
Clerical and administrative workers	4	1	6	2	5	8	5	2	3	5	1	3	2	47	1%	1%
Total*	259	284	258	284	310	283	258	228	224	229	201	194	195	3207	100%	100%

Note: Only selected occupation sub-major classifications are included. Therefore the number of fatalities in the selected sub-major classifications will not add to the category total.

*The total number of fatalities and percentage figures for each column shown in this table will not equal the total due to rounding and the inclusion of selected subdivisions and groups within an industry division.

Appendix A6: Worker fatalities: fatality rate by occupation, 2003 to 2015 (sorted by 2015 fatality rates)

Occupation	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Machinery operators and drivers	13.7	14.2	11.9	13.5	15.7	13.1	13.8	9.1	8.2	10.5	8.1	8.8	8.9
Road and rail drivers	24.9	26.2	20.7	25.2	28.6	23.2	25.0	16.3	14.8	20.8	15.2	15.1	13.0
Mobile plant operators	9.3	6.5	6.5	8.0	12.2	6.6	9.1	5.6	5.0	5.4	4.4	4.3	12.3
Machine and stationary plant operators	4.0	4.8	6.9	5.5	4.1	8.5	5.7	4.3	4.7	2.9	3.8	7.3	5.0
Labourers	5.6	5.5	3.8	4.6	4.9	5.6	3.5	4.5	3.6	4.2	3.6	4.4	3.9
Farm, forestry and garden workers	15.8	20.6	13.2	10.8	13.8	31.4	11.1	18.3	13.7	14.7	11.0	20.0	17.2
Construction and mining labourers	17.8	7.0	8.4	9.5	7.8	9.0	6.8	7.0	7.1	8.8	5.2	5.7	5.7
Professionals	1.0	0.8	1.2	1.2	1.1	0.9	0.9	1.0	1.0	0.9	0.5	0.4	0.4
Design, engineering, science and transport professionals	6.9	4.6	6.5	5.6	3.9	4.7	3.8	3.6	5.0	3.9	2.3	2.4	1.3
Managers	3.5	4.1	4.0	3.3	2.8	2.5	3.1	2.3	2.8	2.6	2.2	1.3	2.1
Farmers and farm managers	15.7	18.1	17.7	14.1	13.7	12.3	15.9	13.6	20.2	14.8	17.2	9.1	13.8
Technicians and trades workers	2.2	3.4	2.9	3.5	3.5	2.8	2.3	2.5	2.6	1.6	1.7	1.7	1.6
Construction trades workers	3.3	4.1	1.8	4.4	5.0	2.9	3.7	3.3	2.1	3.2	0.8	2.8	2.7
Automotive and engineering trades workers	3.0	4.4	3.8	3.4	3.7	4.4	2.8	2.8	3.1	1.1	3.0	1.9	1.8
Electrotechnology and telecommunications trades workers	4.6	6.2	7.0	5.6	6.1	4.2	2.8	3.4	6.4	2.6	4.0	3.0	2.9
Community and personal service workers	1.4	2.0	1.4	1.6	1.1	0.9	1.4	0.8	0.9	0.8	1.2	1.0	0.7
Protective service workers	5.9	5.2	6.5	5.7	4.1	2.4	6.1	3.1	2.2	5.1	2.7	2.0	..
Sales workers	0.7	0.4	0.5	0.7	1.0	0.7	0.4	0.5	0.1	0.3	0.6	0.2	0.2
Clerical and administrative workers	0.3	0.1	0.4	0.1	0.3	0.5	0.3	0.1	0.2	0.3	0.1	0.2	0.1
Total	2.7	3.0	2.6	2.8	3.0	2.6	2.4	2.1	2.0	2.0	1.7	1.7	1.6

Note: Movements in fatality rates in occupations with 5 or fewer fatalities each year should be viewed with caution