

IN THE CORONERS COURT
OF VICTORIA
AT MELBOURNE

Court Reference: COR 2011 002222

REDACTED FINDING INTO DEATH WITHOUT INQUEST

Form 38 Rule 60(2)

Section 67 of the Coroners Act 2008

I, PARESA ANTONIADIS SPANOS, Coroner,

having investigated the death of SN
without holding an inquest:
find that the identity of the deceased was SN
born on 11 March 1934,
and that the death occurred on 19 June 2011
at Beaumaris Victoria 3193

from:

1 (a) MULTIPLE INJURIES SUSTAINED IN A MOTOR VEHICLE INCIDENT
(PEDESTRIAN).

Pursuant to section 67(2) of the **Coroners Act 2008**, I make findings with respect to **the following circumstances:**

1. SN was a 77 year-old woman who resided with her son and his family in Beaumaris. SN previously lived with her husband in Wales, United Kingdom, until his death on 16 January 2011. SN's son went to the UK to arrange his father's funeral, and SN returned with him to Australia. SN enjoyed relatively good health for her age, wore reading glasses and hearing aids.
2. After arriving in Australia on 21 April 2011, SN soon settled in to a routine of taking the family dog for morning walks around the neighbourhood.
3. On Sunday 19 June 2011 at about 10.55am, SN left home to walk the dog after breakfast. At about 11.20am, the family heard sirens and were alerted by a neighbour to a motor vehicle collision involving an elderly woman with a dog. They rushed out to the street to see an ambulance and police officers outside a home in Beaumaris, and SN lying on the road in front of a white utility. An

ambulance officer informed SN's son that his mother had been struck by the utility and was deceased. The family dog was also injured and was euthanised.

4. The police investigation determined that SN had been walking along the footpath when she was struck by the utility, driven by a man as he was reversing out of his driveway. The driver submitted to a preliminary breath test at the scene and tested negative for alcohol.

5. In his statement to police, the driver stated that he was a 23 year-old electrician who had owned the utility for 18 months and was familiar with its operation and blind spots. He had lived at Beaumaris his entire life. That day he was leaving home to do some work for a family friend and not running late. The previous night, he had stayed at his girlfriend's house and had at least nine hours' sleep, waking at 10.00am before returning home. He denied being distracted by anything, and recalled checking both side mirrors and looking out the driver's side window before reversing. He recalled that one part of his view was obstructed by his neighbour's truck that was parked in their driveway. Police observed a white utility vehicle in the next-door neighbour's driveway and the vehicle is visible in the scene photographs.

6. Police noted that the driver's vehicle was a 2005 Ford Courier utility with a purpose-built boxed cabin attached to the rear tray ("the utility"). According to his statement, prior to reversing, the vehicle had been parked in his driveway behind another vehicle, about two metres from the footpath. The reversing lights on the utility were functioning, but it was not fitted with a reverse warning beeper, reverse sensor or camera. Vision of the rear of the vehicle was only possible via the two external side mirrors, as the cabin obstructed vision through the rear window of the utility.

7. Police ascertained that at the time of the incident, the road was dry and visibility was good. They noted that a timber fence along the eastern boundary of the driveway measured 1.06 metres in height and was unlikely to have hindered the driver's view. From her position on the footpath, SN should have had an uninterrupted view of the utility in its parked position in the driveway, as she approached. The police found no evidence that speed was a causative factor. Nor did they identify any other apparent want of care on the driver's part.

8. Police were unable to determine why neither the driver nor SN were unable to take effective evasive action to avoid the collision. While the timber fence did not appear to the police to have hindered visibility for either party, the driver stated that his neighbour's vehicle parked in the adjacent driveway impeded his view when he performed a head check through the driver's side window before commencing to reverse.

9. An external examination of SN's body was performed by Forensic Pathologist Dr Yeliena Baber from the Victorian Institute of Forensic Medicine (VIFM). Dr Baber also reviewed the circumstances as reported by the police to the Coroner, post-mortem CT scanning of the whole body (PMCT) and provided a written report of her findings. In the absence of a full post mortem examination, and on the basis of the information available to her, Dr Baber advised that it would be reasonable to attribute death to *multiple injuries sustained in a motor vehicle incident (pedestrian)*. Dr Baber noted that PMCT scan showed a fractured pelvis, bilateral femoral fractures, multiple bilateral rib fractures, surgical emphysema and bilateral haemopneumothoraces. Toxicological testing did not reveal the presence of any common drugs or poisons in post-mortem blood samples taken from SN.

10. I find the cause of death of SN to be multiple injuries sustained in a motor vehicle incident (pedestrian). The evidence does not allow me to make a decisive finding about the entire circumstances in which SN sustained her fatal injuries, or the role played by the driver. The possibility that the driver's view was obstructed by his neighbour's parked vehicle remains open.

11. In light of the circumstances in which SN died, I asked the Coroners Prevention Unit (CPU) to provide advice on the following:

- the incidence of pedestrian injuries due to being struck by a vehicle reversing from a driveway;
- previous comments and recommendations made by coroners in this area; and
- relevant prevention measures with respect to road users, vehicle and environmental factors.

The CPU examined information from VicRoads, the Victorian Driveway Safety Committee, Monash University Accident Research Centre, RACV and Insurance Australia Group Research Centre. A summary of the CPU's advice is attached at **Appendix A**.

12. In brief, CPU advised that between January 2000 and December 2012, nine pedestrians died in Victoria after being struck by a vehicle reversing from a private driveway whilst walking on a footpath or a road where no path was available. Identifying all relevant VicRoads data was complicated by the high proportion of incidents where vehicle movement type and incident location were unspecified. However, where known, in the five-year period (2007-11) there were 151 pedestrian injuries reported to police due to a vehicle reverse departing from a private driveway or laneway.

13. A number of factors appear to contribute to these incidents:

- Older pedestrians are generally more vulnerable to injury due to their increased frailty, but they are also slower to respond to approaching vehicles. Every Victorian fatality identified involved a person aged over 75 years
- Drivers are required to give way to pedestrians on a footpath when entering a road from a private driveway. Many of the coronial findings indicate that the driver failed to adequately check prior to reversing
- Environmental factors such as high fences, overhanging bushes or trees and parked cars have been mentioned in previous coronial matters as being a factor due to restricting road user visibility
- The vehicle involved in SN's death had a boxed cabin on the rear tray, impeding the driver's rear visibility. Research undertaken by the Insurance Australia Group (IAG) Research Centre in NSW revealed that many vehicles in fact have poor rear visibility.

COMMENTS

Pursuant to section 67(3) of the **Coroners Act 2008**, I make the following comments connected with the death:

1. General community awareness of the potential conflict between pedestrians on footpaths and reversing vehicles is an important safety message. Given that such injuries account for a small proportion of all pedestrian injuries, it is unlikely that funding would be provided for a specific community education programme or campaign. However, there is scope for integrating this important safety message into existing community education programs, particularly those targeting older pedestrians.
2. Front and side fencing height requirements exist, but are primarily aimed at enhancing the streetscape. Other factors such as trees, shrubs and parked vehicles may also impede driver and pedestrian visibility.
3. Vehicle safety technology has the real potential to improve pedestrian safety in this regard, but widespread uptake of such technology will take time. The physical design factors that create blind spots on modern vehicles are inevitable, and all vehicles have visibility issues.

4. The Insurance Australia Group (IAG) has stated that reversing camera technology is currently the most promising solution that at least provides a tool to assist drivers with lack of rear vision. The IAG also noted that this technology has the possibility of being supplemented or even replaced by emerging technology such as Autonomous Emergency Braking (AEB) systems, which are already able to detect pedestrians.

5. However, technology is only part of the solution and does not absolve drivers of their responsibility to reverse safely, and pedestrians of their responsibility to maintain situational awareness.

I direct that a copy of this finding be provided to the following:

The family of SN
Senior Constable Mark Bates, Bayside Police Station
Victoria Police – Road Safety
VicRoads
RACV
Victorian Driveway Safety Committee
Monash University Accident Research Centre
Insurance Australia Group Research Centre.

Signature:



PARESA ANTONIADIS SPANOS
CORONER
Date: **24 September 2013**



APPENDIX A

Pedestrian safety associated with vehicles reversing out of driveways

1. The VicRoads Road Crash Investigation System (RCIS) identifies pedestrian fatalities involving a vehicle leaving a driveway. The CPU obtained data on all pedestrian injuries over a five-year period (2007-2011) broken down by incident year, age and sex of pedestrian, injury severity, location, vehicle type and proportion involving a reversing vehicle. The requested data contained a list of incidents of pedestrians on footpaths struck by vehicles entering or leaving driveways, including both on and off-road crashes. The data was person-based, meaning a collision resulting in two pedestrian injuries would be counted twice. The CPU linked each fatal collision to the coronial record to examine the incident circumstances in more detail.
2. In the five-year period 2007-2011, VicRoads recorded 500 pedestrian injuries due to a vehicle entering or leaving a driveway in Victoria. Where specified, 51 per cent of the pedestrian injuries were the result of a vehicle departing in reverse. The vast majority of these reverse departing incidents occurred whilst the vehicle was leaving a private driveway or laneway (77 per cent).
3. There were 151 injuries to pedestrians due to reverse-departing incidents from private driveways or laneways of particular interest for the purposes of this investigation. In examining the nature of these injuries, it was apparent that the vast majority of injuries were sustained by persons over the age of 75 years (39 per cent where age was known). The data also revealed that these injuries mostly occur during peak commuting times¹ where pedestrian and vehicle activity is at its highest. The majority of incidents (81 per cent where n=123) occurred on a weekday.
4. The RCIS identified 23 pedestrian deaths in Victoria between 1 January 2000 and 31 December 2012 as having resulted from a collision with a vehicle entering or leaving a driveway. A review of the available coronial information for these 23 deaths revealed that:
 - 17 (74 per cent) involved a vehicle reverse departing
 - four involved a vehicle forward departing
 - one involved a vehicle forward entering
 - one involved the inadvertent movement of a vehicle in a driveway.

¹ Between 9.00am and 11.59am, and between 3.00pm and 5.59pm.

Of the 17 incidents involving a vehicle reverse-departing:

- seven pedestrians were walking along a footpath at the time, while two pedestrians were walking along the roadway because no footpath was available
- four pedestrians were already positioned in the driveway (standing or lying)
- four pedestrians were crossing or otherwise positioned on the roadway.

5. In placing these deaths in the context of all pedestrian injuries, according to the VicRoads website, during the last five years there were on average 48 pedestrian deaths and 690 serious injuries each year. On average there were 1.7 deaths and 11.8 serious injuries annually due to a pedestrian being struck by a vehicle reversing from a driveway (2007-11).

Safety information and campaigns

6. Recently, a series of young children fatally injured in driveway collisions, both in Victoria and interstate, prompted road and child safety agencies to investigate options for improved driveway safety. Between January 2000 and September 2012 for example, 14 children sustained fatal injuries after being struck by a vehicle in a driveway in Victoria with seven deaths occurring since October 2010. In the findings into the death of three of these fatalities,² Coroner John Olle noted that the deaths provided the impetus for the formation of the Victorian Driveway Safety Committee and in August 2012, the Committee launched a public awareness campaign. The Coroner's finding also acknowledged that driveway safety was identified by the Commonwealth Government as a national road safety priority. The Coroner made no formal recommendations and while these driveway safety initiatives are aimed at reducing the number of run-over incidents involving young children inside driveways, many of the safety measures also apply to other pedestrians, including the elderly.

7. The public awareness campaign stemming from the Victorian Driveway Safety Committee encourages drivers to exercise caution when reversing. The campaign message is 'Just because you can't see me, doesn't mean I'm not here.' The safety message has been communicated through both print and radio.

² Refer to the Finding with Inquest into the death of Prabh Dhiyan (case no. 20110598). Available from: <http://www.coronerscourt.vic.gov.au/home/coroners+written+findings/ findings++059811+prabh+dhiyan>.

8. The RACV also has information on its website advising drivers to use their horns prior to reversing:

A little bit of common sense can go a long way to reducing the number of accidents that occur as a result of someone reversing a vehicle. If your rear view is limited, take it slow and cautiously, remembering to check your left, right and rear views before and during the manoeuvre. You may wish to give a few brief taps to your horn and if you have a passenger, it may be advantageous to have them out of the vehicle to guide you. And you should always try to anticipate the unexpected, such as a pedestrian suddenly appearing, or a vehicle travelling along looking for that ever elusive parking spot.

Further to the above, when a driver wants to enter a road from a driveway, or vice versa, the driver is required to give way to any vehicles already travelling on the road, as well as any pedestrians on the footpath that the driver must cross.³

9. VicRoads has a website dedicated to pedestrians over 65 years of age. The website notes that while walking brings health benefits, this age group is involved in a higher number of crashes because of eyesight and hearing decline, and they have more difficulty judging the speed and distance of traffic. They also may not move or react quickly to avoid approaching vehicles. The website content is focused on advice around how to cross the road safely. This information is also contained in the VicRoads publication, *Don't take chances – Being a safe walker* (March 2012).⁴ The publication notes that nearly half of all crashes involving pedestrians 65 years or over occur within their local postcode area.

Vehicle safety features

10. Relevant vehicle design and safety technology includes rear visibility ratings, audible reversing alarms, reverse parking sensors, reversing cameras and collision avoidance technology (autonomous emergency braking). In response to a number of child driveway deaths in New South Wales, the Insurance Australia Group (IAG) Research Centre created a Reversing Visibility Index, which offers a star rating system for vehicles measuring how well a driver can see out the rear of the vehicle.⁵ The IAG determined that all cars have a blind area that can easily hide a child. The IAG has noted that there are a number of vehicle design issues that contribute to the problem of rear visibility blind spots, including high mounted spare tyres on some SUVs, rear window wipers, high

³ RACV (2013) Reversing out of driveways. Retrieved 13 June 2013 from: https://www.racv.com.au/wps/wcm/connect/Internet/primary/road+safety/roads+_+traffic/road+rules/common+road+rules/reversing+out+of+driveways.

⁴ VicRoads (2013). Pedestrians Over 65. Retrieved 13 June 2013 from: <http://www.vicroads.vic.gov.au/Home/SafetyAndRules/PedestriansSafety/PedestriansOver65.htm>

⁵ Insurance Australia Group (2013). Reversing Visibility. Retrieved from: http://iagresearch.com.au/index.php?option=com_content&task=view&id=277&Itemid=262

boot lids in sedans and high mounted add on spoilers and head restraint design, which can make looking through the back window difficult.

Parking sensors

11. The IAG has stated that they are useful only for preventing parking damage to a vehicle, and were not seen as a useful tool in preventing driveway injuries due to the short range effectiveness and the tendency to false alarm. After-market parking sensors are now widely and cheaply available, costing around \$100.

Reversing camera systems

12. These systems comprise a camera attached to the rear of the vehicle that transmits an image to the driver on a screen in the dashboard. After-market cameras are also widely and cheaply available, costing around \$200. Around 30 per cent of car variants available on the market have reverse cameras as standard and 24 per cent as an optional extra. When used appropriately, they can mitigate the occurrence of backing crashes. However, the usefulness of a reversing camera system also depends on whether the driver looks at the screen.

13. According to Europe's New Car Assessment Program, 90% of road accidents are caused by distracted or inattentive drivers. Car manufacturers are now developing systems which can alert the driver to an imminent crash and help to use the maximum braking capacity of the car, also applying the brakes in critical situations, known as Autonomous Emergency Braking (AEB). Such systems can reduce accidents by up to 27 per cent, can lead to a significant reduction in injuries and have been described as the 'next big thing' in road safety.

Road Safety (Vehicles) Regulations 2009

14. The *Road Safety (Vehicles) Regulations* state that a motor vehicle must be fitted with at least one horn or other device that can give sufficient audible warning to other road users of the approach or position of the vehicle. The Regulations also state that a motor vehicle *may* be fitted with a device that emits a regular, intermittent sound while the vehicle is reversing.

Occupational Health and Safety Regulations 2007

15. These *Occupational Health and Safety Regulations* require an employer to ensure that, if there is a likelihood of powered mobile machinery or equipment colliding with pedestrians or other powered mobile plant, a device warn people who may be at risk from the movement of the machinery or equipment. However, this regulation does not apply to a private vehicle, primarily designed for use as a means of transport on public roads or rail.