IN THE CORONERS COURT

OF VICTORIA

AT MELBOURNE

Court Reference: COR 2013 3915

FINDING INTO DEATH WITHOUT INQUEST

Form 38 Rule 60(2)

*Section 67 of the **Coroners Act 2008***

I, AUDREY JAMIESON, Coroner having investigated the death of SANDEEP SINGH BRAR

without holding an inquest:
find that the identity of the deceased was SANDEEP SINGH BRAR
born 15 August 1983
and the death occurred 2 September 2013
at Hood Street, Mont Albert VIC 3127
from:

1 (a) CARBON MONOXIDE POISONING[1]

Pursuant to section 67(1) of the **Coroners Act 2008**, I make findings with respect to **the following circumstances**:

1. Sandeep Singh Brar was 30 years of age at the time of his death. He was born in India and moved to Australia in January 2007 to complete a Diploma in Commercial Cookery. Mr Brar lived at 41 Melville Street, Tarneit with a housemate, and he was employed as a taxi driver. He

[1] Carbon monoxide is an odourless, colourless gas produced from the incomplete combustion of organic fuels. It is present in cigarette smoke and in automobile exhausts. Normal concentrations of carbon monoxide in non-smokers living in an urban environment are generally less than 2%. In smokers, concentrations may reach 6%. Levels of carboxyhaemoglobin that exceed 50% saturation are considered as life threatening. Analysis of a series of fatalities due to accidental or intentional inhalation of automobile exhaust gases has revealed carboxyhaemoglobin concentrations ranging from 48 to 93% with an average of 72%. Exhaust gases from modern vehicles using catalytic conductors may produce less carbon monoxide than older vehicles but may contain sufficient amounts of other gases to assist in asphyxiation.

had recently been granted permanent residence in Australia; his wife was living in India while they made visa arrangements.

2. At approximately 7.05pm on 2 September 2013, police located Mr Brar in a 2009 Ford Falcon FG sedan taxi on Hood Street, Mont Albert, while conducting a welfare check. Local residents had noticed the taxi had been parked for over an hour, and that the driver was slumped back in the seat, and had alerted police. The vehicle's registration was M2081, it was stationary near the curb, and the engine was still running. The Metropolitan Fire Brigade and Metropolitan Ambulance Service also attended. After the engine was turned off, a fire brigade member unsuccessfully felt for a pulse on Mr Brar's neck, and the ambulance paramedics confirmed that he was deceased.

INVESTIGATIONS

Forensic pathology investigation

3. Dr Michael Burke, Senior Forensic Pathologist at the Victorian Institute of Forensic Medicine performed a full post mortem examination upon the body of Mr Brar and referred to the Victoria Police Report of Death, Form 83. The post mortem examination showed no evidence of any injury that would have contributed to or led to Mr Brar's death.

4. Post mortem toxicological analysis of blood and urine samples detected carboxyhaemoglobin at approximately 75% saturation,[2] morphine[3] and codeine.[4]

5. On the information available to him, Dr Burke reported to the Coroner that the cause of Mr Brar's death was carbon monoxide poisoning.

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[2] Carbon monoxide (CO) is an odourless, colourless gas produced from the incomplete combustion of organic fuels. It is present in cigarette smoke, fires and in automatic exhausts. CO is a poisonous gas and when inhaled displaces oxygen from haemoglobin, reducing the ability of blood to retain oxygen. The degree of displacement is typically quantified as percent saturation, that is the percent of haemoglobin is bound to CO. At 50% saturation, CO has displaced half of the oxygen bound to haemoglobin. Normal concentrations of CO in non smokers living in an urban environment are generally less than 2%. In heavy smokers concentrations may reach 6%. Analysis of a series of fatalities due to accidental or intentional inhalation of automobile exhaust gases has revealed carboxyhaemoglobin concentrations ranging from 48 to 93% with an average of 72%.

[3] Morphine is a narcotic analgesic used to treat moderate to severe pain. It is also a metabolite of codeine. Morphine is available as morphine tablets or injection, morphine infusions in hospital, or it may derive from the use of heroin. Occasionally, small amounts of morphine are associated with codeine use.

[4] Codeine is a narcotic analgesic related closely to morphine but having approximately one-tenth the activity of morphine as an analgesic and possessing antitussive activity.

Police investigation

6. The circumstances of Mr Brar's death have been the subject of investigation by Victoria Police on my behalf. The police investigation did not identify evidence of third party involvement.

7. Police obtained statements from a local Mont Albert resident, Owner and Director of Capital City Taxis Pty Ltd Mr Nasir Choudhary, Fleet Manager at Capital City Taxis Pty Ltd Mr Imran Siddiqui, Mechanic for Capital City Cabs Mr Shivan Doski, Panel Beater and Spray Painter Mr Zak El-Ahmed, Motor Mechanic Mr James Espositos, as well as Mr Brar's housemate and friend Mr Anant Sandhu. Police also obtained an investigation report from Energy Safe Victoria, and a statement from Forensic Officer and Motor Mechanic Mr Glen Dower.

8. With the assistance of a representative from the Taxi Services Commission, police viewed the internal in-taxi footage of the incident at approximately 8.20pm on 2 September 2013. The footage showed Mr Brar taking a nap, while remaining in the driver's seat. At approximately 12.38pm, the deceased began moving in an action that looked like 'fitting'. The 'fitting' went on at various levels of movement until approximately 1.22pm, when Mr Brar became still.

9. Fleet Manager Mr Siddiqui received a call between 8.30pm and 9.00pm and he, Director Mr Choudhary, and a friend of theirs attended the scene shortly afterwards. Mr Siddiqui reported that the police did not tell them how they thought Mr Brar had died. Between approximately 11.00pm and 11.30pm, they were told they could take the car. Mr Siddiqui drove the car back to the depot at Coburg North and did not notice anything wrong with the car during the 20 to 30 minute drive.

10. On 3 September 2013, taxi M2081 was driven by another driver for a day shift, who did not report any faults with the car.

11. In the course of their investigation, police learned that a further male taxi driver, Mr Salman Shahid had been involved in an apparent carbon monoxide incident whilst in taxi M2081 on the night of 3 September 2013. Following this subsequent event, Mr Choudhary said that the cab was towed to Silvertop Taxis and decommissioned. Days later, Mr Choudhary towed taxi M2081 back to the depot.

12. An authorisation was signed by Deputy State Coroner Iain West on 20 September 2013, and that day, police removed Taxi M2081 and it was towed to Victoria Police Forensic Services

Centre, Macleod. I signed a further authorisation on 15 October 2013, and police seized a number of documents relating to taxi M2081 on 17 October 2013.

13. In a report dated 8 November 2013, Energy Safe Victoria provided the results of air quality testing undertaken within taxi M2081. Prior to the commencement of testing, it was noted that the vehicle's exhaust pipe was broken directly behind the rear muffler, and there was a gap in the back seat of the vehicle where it appeared that the base of the seat had come away from the backrest. The testing indicated that the level of carbon monoxide at the driver's seat of taxi M2081 exceeded 400ppm after 10 minutes of operation of the vehicle and that levels of carbon monoxide of between 250ppm and 400ppm were maintained over the 35 minute test period. The report concluded that a concentration of carbon monoxide at these levels could result in a concentration of 40-50% haemoglobin human blood being bound to the carbon monoxide. The report quoted the Australian Government Department of the Environment website, which stated 'no more than 2.5% of haemoglobin can be bound to carbon monoxide before some health effects become noticeable. At very high concentrations of carbon monoxide, up to 40% of the haemoglobin can be bound to carbon monoxide in this way. This level will almost certainly kill humans.'

14. In his statement dated 8 November 2013, Forensic Officer and Motor Mechanic Mr Dower formed the opinion that exhaust gasses would build up in the offside rear bumper cavity of the vehicle, due to the damaged tail pipe, and were then free to enter the boot via unsealed holes and a leaking boot vent. The vehicle was factory fitted with a split fold rear seat that was not designed to seal the cabin from the boot cavity. Given the right circumstances, this would allow exhaust gasses to enter the cabin. A leaking exhaust manifold sealing ring was not leaking sufficiently, nor was it able to build up a positive pressure in the engine bay to cause a significant exhaust gas entry into the cabin via a leaking firewall grommet. However, it could not be ruled out as a minor contributor in allowing exhaust gases into the vehicle's cabin area.

15. Mr Dower referred to a series of service invoices from Alpha Trading Engineering Pty Ltd for repairs to taxi M2081, dated between 8 July 2013 and 20 August 2013. No record of weld repairs to the forward muffler[5] nor body repairs to the vehicle were observed on those invoices.

16. Panel Beater and Spray Painter Mr El-Ahmed replaced the rear bumper on taxi M2081 on 14 or 15 March 2013. He reported that Mr Choudhary ordered the parts and he just repaired it,

[5] This was notable as Mr Dower had also said in his report that the forward muffler showed evidence of a recent welding repair to its rear.

putting on the new bumper bar and spray painting it. Mr El-Ahmed said that some of the clips that hold the rear bumper bar onto the back of the car had fallen off, so Mr Choudhary ordered some new clips, and he fitted the bar on. Mr El-Ahmed said that the rear section of the exhaust was definitely not broken at this time. He added that he had been shown a photo of a large hole that had not been covered by a bracket. He said it should have a small round rubber in it to close the hole. Mr El-Ahmed was sure that he had put the rubber back in this hole when he repaired the car. He also repaired the rear right hand side quarter panel and it took him about two days to fix the car in total.

17. Motor Mechanic Mr Espositos stated that he performed a first roadworthy inspection on 15 July 2013 and the last and final check, one week later on 22 July 2013. He said that his tests involve checking the exhaust systems, and that the common fault with Ford exhaust systems is a crack in the rear of the first muffler or resonator. However, Mr Espositos said it is unusual for them to break at the rear of the car and that he could not remember ever seeing an exhaust break at the rear on an FG Falcon 2009 model. He said that if he had seen a section of the exhaust had broken away like that, it would have been noted as an unroadworthy item, and it would have been fixed prior to him signing off on the Roadworthy Certificate.

18. While Mechanic Mr Doski reported that he was not familiar with taxi M2081, he said that the exhaust was definitely not broken when it last came to him. He said he would have seen this and had it replaced.

19. Mr Choudhary stated that after the death of Mr Brar, he ordered three carbon monoxide detectors to use on his cars. He also found carbon monoxide alarms, called 'X-Detect', and planned to install them in every taxi that he owned. Mr Choudhary said that the alarm would show the level of carbon monoxide in the car and when it reaches a dangerous level it will beep and alert the driver.

WorkSafe Investigation

20. On 8 October 2013, Victorian WorkCover Authority (WorkSafe) inspectors visited Box Hill Police Station to commence enquiries into the death of Mr Brar and serious injury to Mr Shahid. It was agreed at this meeting that Victoria Police would facilitate an interview with the owner of taxi M2081, and that WorkSafe would be in attendance.

21. On 22 November 2013, WorkSafe inspectors seized a number of pieces of evidence from Box Hill Police Station in relation Mr Brar's death. These included Certificates of Roadworthiness, Tax Invoices, Taxi Fault Report Forms and an Accident Report dated 10 March 2013.

22. On 2 June 2014, the Court was informed by email that WorkSafe had not commenced an investigation into this matter as it was determined that there was no evidence of any breaches under the *Occupational Health and Safety Act* 2004.

Further Investigations

23. On 24 June 2014, I met with Senior Constable Paul Collins from the Police Coronial Support Unit and Mr Dower. In this meeting, Mr Dower added that looking at the end of the tail pipe, the plastic bar was elongated and melted – indicating exhaust would have been seeping out for some time. On 8 July 2013, a taxi fault report form indicated that sound was coming from the rear of the vehicle. Mr Dower said this was consistent with the tail pipe sitting in that position. The repairer had looked at the rear of the vehicle and made other repairs. Mr Dower said he could not determine exactly when the exhaust pipe initially cracked. The tail pipe had broken off and not necessarily recently. Mr Dower added that it would not have mattered if the exhaust pipe had broken off if the repair and paint job had been done properly. He said that the broken exhaust pipe should have been noticed and replaced at the roadworthy testing on 15 July 2013 and 22 July 2013, and the last service on 20 August 2013. However, it was quite likely that the exhaust pipe was not cracked until after these events.

24. In a further statement dated 25 July 2014, Mr Dower elaborated on the use of a smog machine to show that the smoke from the machine was able to enter into the offside well of the boot through poorly repaired accident damage and unsealed holes. Entry of smoke into the boot area was also observed through the offside rear flow through the ventilation vent. The vent flaps on both sides were distorted, possibly due to being painted post factory and did not make a positive seal. Mr Dower added that further testing had been completed to establish a point of entry of gasses into the cabin from the boot. His observations showed smoke enter through gaps in the split fold rear seat at the top, where it met with the rear parcel shelf.

25. In his further statement, Mr Dower said he would not recommend sleeping or 'power napping' in a motor vehicle that has the engine running. He said that general issues beside carbon monoxide poisoning include, but are not limited to, electrical fires, fuel fires and the potential

of the vehicle to move off due to accidental or subconscious release of the hand or transmission brake.

Coroners Prevention Unit investigation

26. I asked the Coroners Prevention Unit (CPU)[6] to further investigate the circumstances of Mr Brar's death on my behalf, particularly in relation to the frequency of deaths from vehicles inadvertently leaking exhaust gases into their cabins, and the potential for recommendations to prevent similar deaths.

27. The CPU searched the the National Coronial Information System, with the intent of identifying deaths in Victoria between 1 January 2000 and 31 May 2016, where a passenger in a motor vehicle succumbed to the vehicle's exhaust gases entering the cabin. Deaths that were determined to be intentional or probably intentional were excluded from the search criteria. The CPU identified two deaths in circumstances, both of which involved vehicles in poor condition.

28. A statement was sought from the Taxi Services Commission (TSC), in particular regarding advice for rest breaks by taxi drivers during a shift. Virginia Thompson, Manager of Operational Policy & Technical Support at the TSC, replied to the Court by email dated 19 April 2016.

29. Ms Thompson noted that there were currently no specific guidelines for taxi drivers regarding the taking of rest breaks in the vehicles with the engine running. However, Ms Thompson noted that the TSC's 'Fatigue Management Guidelines' were currently under review and would be amended to explicitly advise drivers to turn off their engines while resting.

30. Ms Thompson also wrote in relation to the installation of carbon monoxide alarms in taxi vehicles. While the TSC had not considered this initiative before, it undertook preliminary investigations into the feasibility of installing the alarms. Ms Thompson advised that while carbon monoxide alarms are freely available and for a reasonable cost, there is no assurance provided by compliance with an Australian standard. From a policy perspective, the TSC was not convinced that installing carbon monoxide alarms is the most effective course of action. Ms

[6] The Coroners Prevention Unit (CPU) was established in 2008 to strengthen the prevention role of the coroner. The unit assists the coroner with research in matters related to public health and safety and in relation to the formulation of prevention recommendations, as well as assisting in monitoring and evaluating the effectiveness of the recommendations. The CPU comprises a team with training in medicine, nursing, law, public health and the social sciences.

Thompson said that the focus should rather be on regular vehicle maintenance to prevent deaths in circumstances such as Mr Brar's. The TSC's approach was stated to mirror that of Energy Safe Victoria, which does not endorse carbon monoxide alarms for domestic use, but strongly promotes regular maintenance of the source to minimise the possibility of carbon monoxide poisoning.

31. Ms Thompson noted that the TSC will raise Mr Brar's death with VicRoads and seek their advice. The TSC would also ensure that vehicle tailpies were inspected as part of the commercial passenger vehicle inspection process. Ms Thompson said that the TSC may also consider using Mr Brar's death, if and when appropriate, to highlight and promote to operators the need for adequate ongoing vehicle maintenance.

COMMENTS

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

1. There has been some shortfall in the maintenance and checking of taxi M2081. In the circumstances, it appears that there may have been some intervening event following the roadworthy testing on 15 July 2013 and 22 July 2013, which has caused the relevant damage. It is unfortunate that the vehicle was not taken off the road to be re-examined.

2. There remain outstanding occupational health and safety issues relating to the modification of taxi M2081 at the time of purchase and the standard of spray painting undertaken.

3. I note that since 30 June 2014, taxi operators' accreditation has been subject to the condition that the operator must take all reasonable steps to ensure every taxi-cab operated or permitted to be operated by that person is in a fit and serviceable condition at the beginning of every shift.[7] As a matter of practice, this would require the completion of a daily vehicle inspection.

4. I note Mr Dower's comments that 'power napping' in a motor vehicle with the engine running provides a potential for injury or death from a poorly maintained vehicle. Carbon monoxide poisoning is just one of the dangers.

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[7] See Parts 2, 3 and Schedule 1 – *Transport (Taxi-cab Industry Accreditation) Regulations 2007* (Vic). Cf: Prior to 30 June 2013, the Business and Service Standards applied and operators were obliged to provide a system or protocols to ensure that the every 24 hours, each taxi cab was inspected regarding fluid levels, tyre tread and pressure, lights and indicators, windscreen condition, wipers and washers, and security cameras.

5. However, I acknowledge the action taken by Owner and Director of Capital City Taxis Pty Ltd Mr Nasir Choudhary to purchase carbon monoxide detectors following Mr Brar's death. I also acknowledge and welcome his stated plans to install carbon monoxide alarms in all of his taxi vehicles.

RECOMMENDATIONS

Pursuant to section 72(2) of the **Coroners Act 2008**, I make the following recommendations:

1. I acknowledge the reasons provided by the Taxi Services Commission for declining to instigate a policy of widespread installation of carbon monoxide alarms in taxis. With this in mind, and with the aim of preventing like deaths, **I instead recommend** that the Taxi Services Commission consider the introduction of mandatory carbon monoxide monitoring for taxi vehicles that is periodic or at the time of service.

2. With the aim of preventing like deaths, **I recommend** that the Taxi Services Commission provide education to drivers on the dangers of carbon monoxide poisoning in connection to 'power napping' while the car engine is running, and also proceed with incorporating the planned amendments to the 'Fatigue Management Guidelines' to explicitly advise drivers to turn their engines off while resting and discourage any existing accepted practices in this regard.

FINDINGS

On the evidence available to me, it appears the broken tail pipe in taxi M2081 facilitated free exhaust gasses to build up in the offside rear bumper cavity of the vehicle, enabling these gasses to enter the boot via unsealed holes and a leaking boot vent. I find that the cabin was not sealed from the boot cavity, and that the carbon monoxide exhaust gas was allowed to enter the cabin while Mr Brar slept with the engine running. The evidence indicates that Mr Brar pulled over to have a nap and did so with the car running. However, it is equally possible that Mr Brar pulled over because he was already being affected by the carbon monoxide.

I accept and adopt the medical cause of death identified by Dr Michael Burke and find that Sandeep Singh Brar died as a result of carbon monoxide poisoning, after falling asleep in taxi M2081.

Pursuant to section 73(1A) of the *Coroners Act 2008,* I order that this Finding be published on the internet.

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

Mrs Shavinder Kaur

Mr Paul Zaharias, Maurice Blackburn Lawyers

Mr Bruce Crosthwaite, Thomson Geer Lawyers on behalf of the Victorian WorkCover Authority

Taxi Services Commission

Vic Roads

Detective Senior Constable Daniel Sullivan

Signature:

AUDREY JAMIESON
CORONER
Date: **16 June 2016**