IN THE CORONERS COURT

OF VICTORIA

AT MELBOURNE

Court Reference: COR 2009 5594

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 BRIAN GLENN MILNES

without holding an inquest:
find that the identity of the deceased was BRIAN GLENN MILNES
born 29 May 1966
and the death occurred on 28 November 2009
at 1252 Bass Highway, Grantville, 3984
from:

1 (a) HYPOXIC BRAIN INJURY

1 (b) CARDIAC ARREST IN A SETTING OF ELECTROCUTION

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

1. Brian Glenn Milnes was 43 years of age at the time of his death. He lived Daylston with his wife, Mrs Lisa Marie Milnes and their three children. He was employed on a full time casual basis as a truck driver by T W & L M Geyer (Geyer), a family partnership owned by Mr Trevor Geyer with his wife, Mrs Lynette Geyer. Mr Milnes had been employed by Geyer for approximately four years, and Geyer had been in operation for approximately 11 years.[1]

[1] Statement of Trevor Geyer dated 14 December 2009, coronial brief of evidence, page 28.

2. At approximately midday on Saturday, 28 November 2009, Mr Milnes was assisting Mr Geyer re-bush the suspension of a semi trailer tipper attached to a white coloured prime mover (registration number PHN950). This repair work was being conducted at a large work shed located at 1252 Bass Highway, Grantville, and required two people.

3. Mr Geyer reversed the truck and trailer into the southern end of the shed. Throughout the course of the afternoon, Mr Milnes and Mr Geyer completed the work, changing five of the bushes to the suspension on the trailer, all completed without any difficulty.

4. Whilst working on the final bush, after identifying that one of the bolts or a pivot bush connected to the back axle[2] was not sitting properly, Mr Geyer drove the truck and trailer out of the workshop. It was decided that by driving the truck and trailer forward and doing a few small skid manoeuvres, the problem might fix itself. Mr Geyer completed this action while still inside the shed but was unable to tell if the bolt had locked into the correct position. The trailer attached to the truck was 36 foot long and tips off the back axle, and Mr Geyer was therefore unable to raise it inside the shed due to the roof height. Mr Geyer then decided to drive out of the shed and raise the trailer. He drover the trailer a small distance out of the shed so that the trailer was approximately two metres clear of it. According to Mr Geyer, he and Mr Milnes discussed the situation and decided to lift up the trailer at that stage.

5. Mr Geyer remained in the truck and activated the Power Take Off Controls (PDO) while Mr Milnes stood at the rear of the trailer on the driver's side approximately three feet out from the axle that had been causing the difficulty. Mr Geyer could see Mr Milnes standing in this position, watching the process and waiting for the trailer to fully rise through the side rear view mirror.

6. At approximately 5.30pm, Mr Geyer heard a loud bang which he described to sound like a tyre blowing. Mr Geyer observed Mr Miles through the mirror to move forward towards the trailer as if he was trying to have a closer look whilst at the same time commencing to lower the trailer by disengaging the PDO and pushing the handle down. Mr Geyer then observed Mr Milnes stop and look towards him before falling to the ground. It was at this point that Mr Geyer realised that the trailer had come into contact with the overhead power lines.

[2] Located on the back axel between the two tyres on the driver's side of the trailer.

7. Mr Geyer immediately went to Mr Milnes, called for help from another employee, Mr Kevin Brain, who had been working at the other end of the shed. Mr Brain commenced cardiopulmonary resuscitation (CPR) whilst Emergency Services were contacted. Approximately 30 minutes later, paramedics arrived and commenced working on Mr Milnes, who was intubated, ventilated and cardioverted prior to being conveyed to the Alfred Hospital via air ambulance. Mr Milnes suffered repeated cardiac arrests in the air ambulance and was observed to have fixed dilated pupils upon arrival at the Alfred at 7.20pm. Radiological tests demonstrated that Mr Milnes had suffered a non-survivable brain injury, and was unable to sustain an adequate blood pressure despite inotropic support. After consultation with Mr Milnes' family, a decision was made to provide Mr Milnes with palliative care. He died at 11.25pm.

8. Victoria Police and WorkSafe Victoria attended the incident scene on 28 November 2009.

9. Energy Safe Victoria's (ESV) Senior Compliance Office Mr William Te Wierik attended and inspected the incident scene on Sunday, 29 November 2009. Site Manager Leongatha, Field Services, Integrated Services for SP AusNet,[3] Mr Ian Glasscock, attended on the same day and conducted an inspection.

INVESTIGATIONS

Forensic Pathology

10. Associate Professor (A/Prof) David Ranson, Deputy Director and Senior Forensic Pathologist at the Victorian Institute of Forensic Medicine, performed an external examination upon the body of Mr Milnes, reviewed a post mortem CT scan, the Victorian Police Report of Death, Form 83, the medical records from the Alfred Hospital and the medical deposition. Anatomical findings included areas of superficial injuries with skin charring identified over the posterolateral aspect of the left little toe, the lateral aspect of the distal part of the left foot, and the palmar aspect of the left hand. A/Prof stated that the appearances were those of a burn, thermal injury and contact type burn respectively of a type that is sometimes seen in situations of electrocution.

11. The post mortem CT scan showed features suggestive of brain swelling.

[3] The relevant three wire 22,000 volt electrical distribution system formed part of SP AusNet 'Lang Lang 13' electrical feeder distribution system (the Report page 64).

12. Toxicological analysis of blood retrieved post mortem identified the presence of medications consistent with Mr Milnes' hospitalisation. No alcohol was identified. A/Prof Ranson opined that a reasonable cause of death on the basis of the material available to him would be a hypoxic brain injury as a result of a cardiac arrest in a setting of electrocution.

SP AusNet

13. Mr Glasscock stated that AP AusNet had established that there had been an automatic reclose (momentary interruption) on the Lang Lang Feeder at 5.06pm on 28 November 2009.[4] After he was alerted to this, he contacted Claims and Investigation Manager Mr Clive Baillie to advise of the alleged incident and attended at the site to carry out an investigation into the incident for the purposes of providing information to SP AusNet and assisting the relevant regulatory authorities.[5]

14. Mr Glasscock conducted height measurements of the vehicle and cables and performed a general examination of the incident location.

15. SP AusNet's site inspection and measurements identified:

    a. the trailer was located approximately five metres to the south-east of a wooden substation termination pole, identified as pole number 143E (asset number 15478). That is, the pole was approximately five metres from the driver's side of the semi-trailer;

    b. a three-phase 50KVA transformer was located on the far (north-western) side of the pole. Supply to the substation installation was via the three overhead aluminium conductors with the alignment of the conductors being in a north-west to south-west direction. Approximately two metres below the high voltage cross arm, a low voltage cross arm was located with low voltage supply to the shed via a service cable attached to the north-west coroner of the shed. A supporting stay wire was located at the back of the pole on the same side as the 50KVA transformer;

[4] Statement of Ian Glasscock dated 1 March 2010, coronial brief of evidence page 51.
[5] Ibid.

c. the height of the three-phase lie above the driveway was measured at 8.7 metres. At the point where there was observable damage to the most northerly conductor, the height of the line was measured at 9.2 metres;

d. damage was observed to the northerly high voltage conductor, which showed significant damage consistent with actual contact or a flashover (not direct contact but contact close enough to enable an arc to flow from the conductor to the trailer) between the vehicle and the conductor. An apparent electrical arc mark was observed on the driver's side of the trailer section approximately 400 millimetres from the leading edge of the trailer section;

e. some of the aluminium strands of the conductor appeared to be scorched as there were white, orange and brown discolouration to them. In addition, the conductor strands were broken away, which would suggest an actual contact, or flashover from a very close approach having occurred; and

f. the right-hand front steering tyre of the prime mover had blown and was deflated. All other tyres of the vehicle and trailer section appeared to be intact.

WorkSafe

16. A Non-Disturbance Notice was issued by WorkSafe Inspector Mr Philip Grimson on 28 November 2009, indicating he would be towing the truck from the location and having it examined and repaired if required.

17. WorkSafe Inspector Mr Russell Tomlin entered the incident site on 29 November 2009 and lifted the Non-Disturbance Notice. Mr Tomlin also entered Mr Trevor Geyer's Koo Wee Rup property (5 Charles Street) on 11 December 2009 in relation to the incident. Mr Tomlin spoke with Mr Geyer and provided him with a list of documentation he required from him pursuant to section 100(1) of the *Occupational Health and Safety Act 2004* (Vic) (OH&S Act). Mr Tomlin again attended Mr Geyer's Koo Wee Rup property on 29 January 2010 to collect the documents.

18. Mr Tomlin entered the manufacturer of the tipper trailer, Hamlex White Pty Ltd, on 16 February 2010 and obtained a statement from General Manager Mr John Rush.

19. By letter dated 7 March 2012, WorkSafe advised the Court that no prosecutions against any persons for any breaches under the OH&S Act occurred.

Energy Safe Victoria

20. Section 7(f) of the *Electricity Safety Act 1999* (Vic) enables ESV to investigate events or incidents that involve electrical safety. ESV Compliance Officer Mr Te Wierik attended the incident scene and compiled a Fatal Electrical Incident Report dated 24 February 2010 (the Report).[6] The Report concludes that the elevated semi-trailer tipper tray contacted overhead 22,000 Volt bare aluminium conductors, which were measured at a height of 9.2 metres above the ground at the point of electrical contact. The 9.2 metre height was noted to be in compliance with Regulation 13 of the *Electrical Safety (Network Assets) Regulations 1999* (Vic).[7] It was understood that the trailer may have been able to extend to a maximum height of 9.720 metres between its topmost extended location and the ground.[8]

21. The Report identifies an arc/burn mark, consistent with the conduction of an electrical fault current on the trailer's upper tray on the driver's side, approximately 400mm from the front of the tray body at the prime mover end.[9] The western most bare 22,000 Volt overhead seven stranded aluminium conductor clearly indicated arc/burn marks in the area located directly above the trailer – approximately 4.5 metres distance from the substation (transformer pole).[10]

22. The 22,000 Volt feeder circuit, at the incident location comprised of three 7/0.93 ACR/GZ (Aluminium Conductors Steel Reinforced/Galvanised) conductors terminating on steel cross-arms mounted on a timber pole. The phase to phase voltage of the overhead electrical conductors (between each of the three conductors) is 22,000 volts ac – the phase to earth voltage rating is 12,700 volts ac.[11]

23. The in-service protection on the Lang Lang 13 Feeder was a GE Multin F650 Relay with protective elements of phase time over-current, neutral time over-current, sensitive earth fault and auto reclose. At 5.06.44hours on 28 November 2009, the feeder relay operated. There was an initial operation of the protection system for a sensitive earth fault for which the feeder

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[6] The Report, coronial brief of evidence page 57.
[7] Ibid, 62. The conductor height above ground exceeded the minimum height which is required to be 6700mm for a bare aerial line operating at 22,000 volts.
[8] Ibid.
[9] Ibid, 61.
[10] Ibid, 62.
[11] Ibid, 64.

tripped after 2.5 seconds and then reclosed after eight seconds. SP AusNet confirmed that written permission was not sought nor provided for any work to be carried out in the vicinity of the high voltage electric line at the relevant site and time.[12]

24. The report identifies the following contributing factors:

    a. failure to maintain the 2,000 mm statutory minimum distance at all times between the trailer's metal tray and the Network Operator's 22,000 Volt overhead power line (Regulation 40 of the *Electrical Safety (Network Assets) Regulations 1999*);

    b. failure to view/observe the overhead power lines;

    c. failure to provide an observer at the immediate location;

    d. no warning "Look Up & Live"[13] notice provided in the prime-mover cabin; and

    e. failure to observe the "No Go Zone"[14] requirements as co-published by WorkSafe and ESV.[15]

25. The Report states that Mr Milnes might have made direct or indirect contact with parts of his person to the 12,700 Volt energised metallic trailer tray in contact with overhead bare electrical conductors while he was simultaneously in contact with the ground.[16] The Report notes that indirect contact would allow sufficient current flow through the body to occur.[17]

26. The Report concludes that, with regard to the physical evidence and information received, a person in contact with the ground and simultaneously in contact with the metallic parts of a

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[12] Ibid.
[13] A safety campaign undertaken by Energy Safe Victoria, which dates back to 1995 (see *Office of the Chief Electrical Inspector Annual Report 1995/1996*, p 7) and provides information and publications directed at truck drivers, rural property owners and their families about the risks of electrocution from trucks contacting power lines on rural properties. The publications are prefaced with the phrase: "LOOK UP AND LIVE – BE ALERT, BE AWARE – OVERHEAD POWER LINES ARE ALWAYS THERE."
[14] The "No Go Zone for Overhead Electrical Power lines" campaign similarly highlights safety issues related to working near overhead power lines on poles and prescribes acceptable and unacceptable distances for working unaccompanied, with a spotter and that of the "no go zones" which are defined distances for safety clearances surrounding overhead power lines. It is incorporated within the "Look Up and Live" publication and a number of WorkSafe publications and training programs. The minimum clearance distances/heights are prescribed in the *Electrical Safety (Network Assets) Regulations 1999* (Vic).
[15] The Report, above no 6, 66.
[16] Ibid.
[17] Ibid.

trailer contacting bare overhead electric conductor carrying 22,000 Volts would receive an electric shock of sufficient intensity to cause death.[18]

Victoria Police

27. The circumstances of Mr Milnes' death have been the subject of investigation by Victoria Police on behalf of the Coroner. Statements were obtained form Mrs Lisa Milnes, Mr Trevor Geyer, his father and owner of the Bass Highway, Grantville property, Mr Hugh Geyer, truck driver Mr Kevin Brain, ambulance paramedics, Alfred Health Physician Dr Peter Carter, Mr Glasscock, Mr Te Wierik, General Manager of Hamelex White (manufacturer of the tipper trailer) Mr John Rush, Acting Sergeant Paul McLean and Senior Constable Ivan Brown.

Mr Milnes' knowledge and experience

28. Mr Milnes had been involved in the trucking and transport industry for over 14 years. He had a multi combination licence, which meant he was licensed to drive with more than one trailer attached to a truck.[19]

29. Mr Milnes' main duties at Geyer comprised of carting hides out of abattoirs in Lances Creek. He worked approximately 50 to 60 hours per week,[20] with the majority of his time spent performing general driving duties, and he was at times allocated to conduct vehicular maintenance. Whilst Mr Milnes performed some mechanical and electrical work on the trucks, the majority was outsourced to a qualified mechanic.[21]

Geyer

30. Geyer operates six trucks transporting abattoir and knackery products in the South Gippsland area. The company employs two full time casual workers and two contract workers to operate their six trucks and nine trailers (keeping one truck as a spare).

31. Mr Geyer runs his company from his home address in Koo Wee Rup and utilises a separate four acre paddock to store his trucks and trailers. This paddock is made up of vacant land that has no water, power of storage sheds.

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[18] Ibid, 67.
[19] Statement of Mrs Lisa Milnes dated 11 February 2010, coronial brief of evidence page 19, 21.
[20] Ibid, 20.
[21] Ibid.

32. Mr Geyer's father, Mr Hugh Geyer, runs a separate tip truck and loader hire company known as H & R C Geyer (H Geyer), which is operated from Mr Hugh Geyer's property located at 1252 Bass Highway, Grantville. This property consists of 10 acres with a house and two sheds. One of these sheds is used for livestock and the second is used for storage, parking and truck and machinery maintenance. Mr Trevor Geyer utilised this second large shed at his father's property approximately once per week to carrying out maintenance work on his fleet as he does not have a shed on his Koo Wee Rup property.[22] The shed is constructed of corrugated iron steel and has a concrete floor. The shed's dimensions are approximately 45 metres in length, 12.5 metres in width and 6.7 metres in height up to the gable. The shed measures approximately 6,000 square feet[23] and runs in a north/south direction with entry doors at both ends. The roadway surrounding the shed comprises of road based gravel mixed with soil and runs along the eastern side with a large turn around area on the northern side. On the southern end lies a small turn around area that runs around a grassed treed area, similar to a roundabout. The southern shed entry comprises two doors approximately 14 feet high and six feet wide, doors opening outward to a width of 12 feet.[24]

33. Approximately seven metres south of this doorway on the western side of the shed is a standard timber power pole. Three strands of power cables run in an east-west direction from the power pole. The three cables run directly across the front of the shed's southern entrance.

34. The relevant trailer rises at a relatively slow rate, taking approximately 40 seconds to fully rise[25] and has the ability to extend to a maximum height of 9.720 metres between its topmost point and the ground.[26]

35. Mr Geyer stated that on 28 November 2009, he had driven the relevant truck to his father's property and reversed the truck and trailer into the Grantville (southern) end of the shed. He explained the shed is in a way divided into two ends, and that he usually uses the northern end. He stated that on 28 November, his father was working at the northern end, so he had to instead use the southern end. Mr Geyer stated that there is probably a 50/50 chance as to which shed he uses on a given day.[27]

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[22] Statement of Trevor Geyer, above no 1, page 28.
[23] Statement of Hugh Geyer dated 29 November 2009, coronial brief of evidence, page 35.
[24] Ibid, 37.
[25] Statement of Trevor Geyer, above no 1, 30.
[26] This height was confirmed as the height from the ground when the trailer if fully raised in the statement of Mr John Rush dated 16 February 2010, coronial brief of evidence page 68, 69.
[27] Statement of Trevor Geyer, above no 1, page 28-29.

36. Mr Geyer explained that he is a vehicle bodybuilder by trade and is capable of doing some types of truck maintenance, and that a mechanic is employed for all major mechanical work.[28]

37. Mr Brain stated that he would usually complete his welding work at one end of the shed and Mr Milnes would complete electrical work at the other end. Mr Brain stated that he normally worked at the southern end where the incident occurred, while Mr Milnes usually worked at the northern end.[29]

38. Mr Brain stated that they brought trucks into the shed from both ends, and that there is ample room at the northern end of the shed to turn truck around. The power lines run at the southern end of the shed, where there are two driveways to back the trucks into the shed. There are no power lines running across the northern entrance.[30]

Awareness of power lines

39. Mr Hugh Geyer stated that his son had driven trucks and trailers under the power lines "hundreds of times",[31] and that he thought:

> *Trevor has lifted the trailer like this before in this area but not as close to the shed. If the trailer had been lifted a few metres further out from the shed this wouldn't have happened. They should have been further away from the shed and they would have been away from the wires when the trailer was lifted.*[32]

40. Mr Brain stated that the trucks and trailers are usually parked in southern end of the shed where the power lines run overhead.[33] Mr Brain stated that the vehicle that was blocking the northern entrance "... could have been moved to let the Sline truck in".[34] He stated "I knew there were power lines there. It is something you can't help but notice. Trevor and Brian would know they were there. The power pole that the wires run off is about 10 to 20 feet from the shed".[35]

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[28] Ibid.
[29] Statement of Kevin Brain dated 12 February 2010, coronial brief of evidence, page 41, 42.
[30] Ibid, 44.
[31] Statement of Hugh Geyer, above no 23, 39.
[32] Ibid.
[33] Statement of Kevin Brain, above no 29, 44.
[34] Ibid
[35] Ibid.

41. Mr Brain stated "I think this could have been avoided. It shouldn't have happened; Trevor shouldn't have raised the tilt trailer under the wires. It was a big mistake."[36]

42. Mr Trevor Geyer stated that he was:

> *...aware that the power lines were there but I think I just became complacent about them. I have previously lifted the trailers up in and around this exact same spot many time[s] before without having any problems. Maybe I was just a couple of feet further out from the shed than on this occasion. The majority of the time I do my tipping down at the other end of the shed where there are no power lines*[37]*... It didn't really come into my mind on this occasion about the power lines. I knew they were there but it didn't really come into my consciousness when I was lifting the trailer on this occasion. It is a regret that I will have to live with all my life.*[38]

43. Mrs Milnes stated "I think it was such a stupid thing to do and could easily have been avoided. People just aren't listening to the advertisements and the advice that is out there. Trevor should have been aware of the danger with what they were doing. Common sense tells you that you shouldn't be working near power lines."[39]

Changes in work practice

44. Mr Hugh Geyer stated that trailers will not be put in the southern end of the shed, that the power lines will be avoided when they drive the semi trailers in the yard. He stated "[t]hey can be put in the other end, it[']s just a matter of moving one truck out. If we had brought the other truck out that was blocking the way this wouldn't have happened".[40]

45. Mr Brain stated that trailers have not been lifted at the southern shed end since Mr Milnes' death.[41]

Other deaths

46. In 2006, three men lost their lives from electrocution when using tipper trailers on rural properties that contacted overhead power lines. On 9 January 2006, Mr Dallas Anderson was

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[36] Ibid, 46.
[37] Statement of Trevor Geyer, above no 1, page 28, 31.
[38] Ibid.
[39] Statement of Mrs Lisa Milnes, above no 19, 26.
[40] Statement of Hugh Geyer, above no 23, page 35, 29.
[41] Statement of Kevin Brain, above no 29, page 41, 46.

electrocuted whilst acting in the course of his employment whilst tipping a consignment of lime at a farm in Bena, Victoria when the trailer of his truck came into contact with overhead power lines.[42] On 19 April 2006, truck driver Mr Brian Baker died whilst delivering fertiliser to a property in Woorak.[43] On 28 April 2006, farmer Mr John Jones died whilst assisting a truck driver to deliver lime to his property in Mudgegonga.[44] The deaths of Brian Baker and John Jones were investigated by WorkSafe and in each case, a decision made not to proceed with a prosecution.[45] In Mr Anderson's case, a prosecution was authorised and charges laid against the supplier and distributor for breaches of the *Occupational Health and Safety Act (2004)* (Vic) (OH&S Act).[46] The matter proceeded to trial in the County Court of Victoria. On 24 June of 2010, the trial jury delivered verdicts of not guilty on all charges in respect of each of the defendant companies.

47. The common threads linking the three deaths included:

    a. the bulk ordering of either lime or fertiliser to farms;

    b. the order was to be delivered by a tipper truck to the farm;

    c. the deliveries in each case had a dumping site that required the tipper truck to be in close proximity to power lines (two lines in Mr Anderson's case and Single Wire Earth Return (SWER) system in the other two matters);

    d. the three incidents resulted in the death of a person due to the tipper trailer contacting overhead transmission lines on the farming properties;

    e. it was apparent that all parties were aware of the power lines;

    f. a qualified spotter was not used at any of the sites; and

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[42] COR 2006 0101.
[43] COR 2006 1427.
[44] COR 2006 1546.
[45] ESV laid charges against the tipper truck driver in the Wangaratta Magistrates' Court under the *Electrical Safety(Network Assets) Regulations 1999* (Vic) for coming too close to the power lines. The truck driver pled guilty to the charges and was wined $1,000.
[46] The charges against Rodnmar Pty Ltd formerly trading as Korumburra Lime And Spreading and Calcimo Lime & Fertilizers Pty Ltd included:

1. OH&S Act 2004 - s 21(1) & (2)(a) Employer failed to provide & maintain so far as was practicable for employees a safe working environment - plant & systems of work [1800 penalty units individual 9000 penalty units body corporate] Indictable offence triable summarily.
2. OH&S Act 2004 - s 21(1) & (2)(e) Employer failed to provide & maintain so far as was practicable for employees a safe working environment - information instruction training & supervision [1800 penalty units individual 9000 penalty units body corporate] Indictable offence triable summarily.

g. the drivers were not familiar with the properties that they were attending.[47]

48. I determined that the deaths of Mr Anderson, Mr Baker and Mr Jones individually warranted the exercise of my discretion pursuant to section 52(1) of the *Coroners Act 2008* (Vic) to hold Inquests into their deaths. The Inquests were held on 2-6 May and 9-13 May 2011. Closing submissions in relation to the three Inquests were heard on 28 June 2011.

49. The general common themes that arose at Inquests included:

a. the tipper trailer driver's knowledge and training;

b. the presence of overhead power lines running through rural properties;

c. procedures around taking orders for bulk deliveries, including site inspections;

d. use of pre-delivery information;

e. knowledge of No-Go Zones;

f. use of an appropriately qualified spotter;

g. other safety measures such as placing warning signs at farm gates to alert visitors to overhead power lines, placing warning stickers relating to overhead power lines inside trucks, and the use of Job Safety Analyses;

h. occupational health and safety responsibility of employers;

i. de-energising power lines;

j. placing power lines underground;

k. enhancing truck driver awareness;

l. legal framework promoting safety;

m. public education and awareness initiates (the adequacy of); and

n. the possible uses of height detection devices.

[47] However it was subsequently revealed in the Inquest into Mr Baker's death that according to the evidence of the land owner, Mr Deckert, that Mr Baker had previously delivered fertilizer to his property and that the earlier delivery had been within 30 metres of the site of the fatal incident.

50. In all three matters, I found that the deaths were preventable.

Coroners Prevention Unit

51. The Coroners Prevention Unit (CPU)[48] reviewed the circumstances of Mr Milnes' death on behalf of the Coroner as part of a cluster investigation into tipper truck electrocutions in Victoria, including the three deaths mentioned above, making Mr Milne's death the fourth fatality of this nature since January 2006.

52. The CPU found that the "Look up and Live" awareness campaigns and mandatory minimum clearance distances established by Work Safe Victoria and Energy Safe Victoria (ESV) have not necessarily demonstrated a reduction in the number of mobile plant contacts with power lines. Based on ESV data analysed, it was apparent that:

    a. between 2002 to June 2009, 101 tipper trucks contacted power lines in Victoria. This equates to an average of one contact incident per month; and

    b. tipper trucks accounted for 15% (n=16) of all contact incidents reported to ESV in a one-year period (July 2008 to June 2009).

53. No information was provided in the coronial brief of evidence regarding Mr Geyer's state of knowledge of the No Go Zone rules developed by WorkSafe Victoria and ESV.

54. All vehicles implicated were semi trailers. It is apparent that modern semi trailers with a tipping capacity, when elevated to a maximum height, exceed the minimum height requirement for overhead power lines.[49]

55. On this occasion, the parties involved were familiar with the site, whereas in two of the 2006 cluster matters, the truck drivers involved were making deliveries to farming properties that they had not previously attended. The parties were also aware of the overhead power lines. As with the three deaths in 2006, an alternative location was available on the property in which to

[48] 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.

[49] In the inquest into the death of Brian Baker, ESV Compliance Officer Mr Terence Clement noted that it was probable that the SWER line had been installed during 1965 and that the size of many of the tipper trailers in use today is such that when elevated to their maximum height, they will exceed the height that the SWER lines are installed above ground (Investigation into the death of Brian Baker, Exhibit 7, ESV Electrical Safety Investigation Report dated 28 June 2006).

safely extend the trailer without risk of contacting an overhead power line. The power lines were identified but were not further considered when elevating the trailer.

Recent incidents involving power line contacts- deaths

56. On 20 May 2010, a helicopter engaged in weed spraying of a pine plantation contacted a power line, resulting in the pilot's death.[50] The pilot was flying according to an aerial operations plan and was reportedly aware of the presence of the power lines.

57. On 16 March 2010, two Victorian farmers died when a windmill being transported by a tractor contacted a Single Wire Earth Return (SWER) line in a neighbour's paddock.[51] Three others who attempted to rescue the men were seriously injured. The incident attracted widespread media attention and the deaths were the first double workplace fatalities in Victoria since November 2002.

Recent incidents involving power line contacts- serious injuries

58. The following incidents were identified through ESV Safety Alerts:

    a. in October 2009, a farm worker in Winchelsea received a severe electric shock and extensive burns to his left hand and foot when a semi trailer tipping truck he was helping to unload contacted an overhead high voltage SWER (12,700 Volt) power line; and

    b. also in October 2009, the operator of a truck-mounted crane in Footscray received a severe electric shock and extensive burns when the crane boom contacted an overhead power line while manoeuvring to unload pipes from the truck.

Energy Safe Victoria initiatives

i. Safety Alert

59. ESV has issued four Safety Alerts since October 2009 in relation to power line contact incidents.

ii. "Look Up and Live" campaign

[50] COR 2010 1904.
[51] COR 2010 1031 and COR 2010 1032.

60. To coincide with the seasonal demand for bulk fertilizer deliveries in 2010, ESV used billboards to advertise the "Look Up and Live" awareness campaign.[52] The billboards were targeted at 12 key rural regions across Victoria, including Ballarat, Bendigo, Batesford, Benalla, Terang, Ararat, Elmore, Shepparton South, Traralgon, Horsham and Wallan.

61. ESV's "Look up and Live" radio and television commercials were also broadcast on regional stations for three weeks in mid February 2010.

Queensland Code of Practice

62. Queensland's Electrical Safety Office recently released the *Electrical Safety Code of Practice 2010: Working Near Exposed Live Parts.*

63. In relation to tipper truck operations, the Code directs workers to:[53]

    a. plan the work and identify the risk of the overhead power lines;

    b. maintain the relevant approach distance to the overhead power lines and take account of the height of the raised tray when the load is elevated;

    c. conduct a risk assessment at the worksite;

    d. implement appropriate risk control measures for the work; and

    e. use a safety observer to observe the truck operations near the power lines.

ProxyVolt® – High voltage proximity warning system

64. At a Safety in Action trade show held in Melbourne in April 2010, a commercially available voltage detection system was featured on display by a Queensland-based company. The device is reportedly used by a number of companies across Australia and can be applied to tipper trucks. Concern is still however held regarding the need for calibration of the device for each delivery location.

65. According to their website:[54]

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[52] See ESV magazine, Summer-Autumn 2010 Edition, page 12.
[53] *Electrical Safety Code of Practice 2010: Working Near Exposed Live Parts*, page 82.
[54] See *ProxyVolt* webpage: http://www.proxyvolt.com.au/ap_high_voltage_detection_warning_system/overview.asp.

Normal procedure is that when a vehicle is relocated, a trained operator (that has completed the on-line induction exam) adjusts the sensitivity in the unit to suit the voltage, required distances and conditions.

This calibration procedure ensures that the equipment will comply with safety guidelines for minimum clearance distances for various voltages.

66. For application to a tipper truck (where the vehicle is relocated on a daily basis) a solo driver would need to undertake training in the operation of the device, and calibrate at each new location knowing the voltage of the line and the operating conditions, which might not be practicable taking into account the nature of the work.

67. At the time of the trade show, the company representatives stated that the device had been fitted to tipper trucks, and that it maintained "coverage" over all potential points of contact along the tipper. They also reported that the companies using the product have provided feedback that they have had no contact incidents since installing the product.

68. At the time of the trade show in 2010, the company reportedly had not approached ESV about the existence and functionality of the product.

National Institute for Occupational Safety and Health (NIOSH) Recommendations

69. The National Institute for Occupational Safety and Health (NIOSH) in the United States runs a state-based Fatality Assessment and Control Evaluation (FACE) program, reviewing selected occupational fatalities to assess prevention opportunities.

70. In a Michigan State fatality investigation report released in April 2010 concerning an elevating roll-off container truck contacting power lines, NIOSH recommended that:

    a. the employer should affix a dry non-conductive material using non-conductive insulators and fasteners at the very top of the tilt frame as a redundant safeguard prior to raising the tilt frame to prevent direct contact with an overhead line;

    b. employers should stress hazard awareness regarding overhead power lines and routinely review the issue so that all employees are cognizant of these energized sources;

c. employers should train employees who work alone to conduct a jobsite survey (hazard assessment) to identify potential hazards before starting any job and to implement appropriate control measures;

d. equipment manufacturers should investigate the possibility of a retrofit of operating controls for boomed vehicles when designed for use from ground level to insulate the operator from the vehicle;

e. employers should develop, implement, and enforce a comprehensive written safety program, and should include:

    i. a safety statement that management is committed to providing leadership to ensure a safe and healthful workplace;

    ii. a safety policy that states "a driver will not place or position or pick up a roll-off container under a power line," and

    iii. the development of a health and safety (H&S) committee.

f. Employers should ensure that a responsible person such as a supervisor/manager periodically monitors workers who are assigned to remote locations.

g. Employers with roll-off trailers as part of their fleet should:

    i. measure the raised tilt frame height of each of their trailers and post this height prominently in either the cab compartment and/or on the trailer near the operating levers, and

    ii. inspect the trailers to ensure affixed signs warning of contact with overhead power lines are present and legible on a routine basis.

Installation of a non-conductive material

71. The Department of Occupational and Environmental Medicine of Michigan State University was contacted by the CPU on behalf of the Coroner in relation to the recommendation to affix a non-conductive material to the tilt frame.

72. Ms Debra Chester, an industrial hygienist, provided the following information via email:

a. How the recommendation was identified/developed:

We look first to engineering controls. All of the reports I write are reviewed by the MIFACE Advisory Board. One of the members who works in construction suggested that this could be an option. I passed this recommendation by my technical advisor at NIOSH, and he consulted others as to its feasibility and practicality in the field. After their determination that it could work, it was included, but not as a primary means of protection, only as a redundant measure.

b. Potential applicability to elevating trailers: Ms Chester believed the approach could work for other types of equipment.

c. Known uses in the United States: Ms Chester advised that she was unaware of the current application of non-conductive materials to plant in operation in the United States at that time.

Australian Standard (Int) 1418.10-2004: Crane, hoists and winches, Part 10: Elevating work platforms

73. Of potential relevance to tipper trucks, the Interim[55] AS1418.10 details the standards for elevated work platforms (EWPs) and where applicable, electrical insulation.

74. When it is necessary to operate an EWP in close proximity to or in direct contact with power lines, EWPs with electrical insulation must be used. The electrical insulation is designed to protect personnel on or near the EWP in the event of accidental contact being made with live wires. Clause 1.5.13 details the technical specifications for EWPs with electrical insulation.

FINDINGS

75. I accept and adopt the medical cause of death as identified by Associate Professor David Ranson and find that Brian Glenn Milnes died from a hypoxic brain injury as a result of a cardiac arrest in a setting of electrocution whilst acting in the course of his employment.

76. I further find that his death was preventable had his employer, Mr Trevor Geyer, not lifted the tipper truck under the overhead power lines. Mr Geyer was familiar with the property, ought to have recognised the relevant hazards, and ought not have placed Mr Milnes in a situation of

[55] At the time of the CPU enquiries this Standard was due to expire on 26 July 2010.

grave and consequently fatal danger. There were other options available in terms of truck placement on the day that, if pursued, could have prevented Mr Milnes' death.

COMMENTS

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

77. Prevention measures to date have strongly focused upon individual behaviour, such as the need to remain attentive, to 'Look Up and Live' and to comply with the No Go Zones rules. Such control measures are widely regarded as the least effective form of prevention as no one is immune from errors in judgement.

78. At the time of Mr Milnes' death, ESV's "Look Up and Live" awareness campaign had not demonstrated the desired changes in behaviour in order to prevent power line contact incidents. Of importance, in each fatal tipper truck contact incident, those in attendance had in fact looked up and were aware of the presence of the power lines. The state of knowledge among Victorian truck drivers of the applicable No Go Zone rules is also unclear.

79. As with all educational programs or campaigns their effectiveness needs periodic evaluation. The evidence in the three Inquests and in Mr Milnes' case reflects that the individuals did all look up and were all aware of the overhead power lines yet proceeded in behaviours contrary to the message of the "Look Up and Live" campaign. Four deaths is a clear indication that, at that time, the message was not being effectively conveyed.

80. Since then, I understand that in 2012, ESV undertook a "reach and recall" survey of the Look Up and Live campaign. I understand that the survey found that the "Look Up and Live" advertising was recalled by one in two regional Victorians, and that it was considered that the message of awareness around power lines was well received. The summary of the report stated that "in terms of behaviour change and awareness, there were very strong likelihoods of regional Victorians making conscious efforts to be more aware and cautious of overhead power lines as a result of seeing the advertising".

81. I commend this review and anticipate the ESV will conduct periodic evaluation of the "Look Up and Live" campaign to monitor long-term effectiveness. To date, there have been no other reported deaths from electrocution relating to the use of tipper trailers.[56]

82. I commend WorkSafe and Energy Safe Victoria for their efforts to disseminate information and provide education to rural Victorians on the risks associated with working near and contacting overhead power lines and the Regulations in respect of the same. I support the continuation of such educational forums and where possible, the continual expansion of educational programs/forums to rural Victorians.

83. Employers and self-employed persons have a duty to ensure that health and safety risks arising from a work environment or conduct of work are eliminated or reduced as far as reasonably practicable pursuant to the *Occupational Health and Safety Act 2004* (Vic). From an OH&S perspective, justification for more stringent control measures would be largely determined by what constitutes "reasonably practicable" in the circumstances. Section 20(2) of the *Occupational Health and Safety Act 2004* (Vic) provides that regard must be had to the following matters in determining what is "reasonably practicable" in relation to ensuring health and safety:

    a. the likelihood of the hazard/risk eventuating;

    b. the degree of harm that would result if the hazard or risk eventuated;

    c. what the person concerned knows, or ought to have known, about the hazard or risk and any ways of eliminating or reducing the hazard or risk;

    d. the availability and suitability of ways to eliminate or reduce the hazard or risk; and

    e. the cost associated with eliminating or reducing the hazard or risk.

84. Investigating control measures that do not rely upon individual behaviour appears necessary to see a genuine reduction in the incidence of mobile plant power line contacts. The above listed factors must be carefully taken into account when examining the feasibility of alternative control measures available.

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[56] This was determined from a CPU supplementary search of the National Coronial Information System and is limited to coronial files that have been coded and closed. I note one matter involved a worker's death from high voltage electrocution whilst using an elevated work platform (COR 2011 2571).

85. I consider that additional measures to support awareness and appreciation of the injury risk created by power lines could reasonably include:

    a. the provision of stickers with the maximum elevated height of the trailer featuring prominently on the vehicle cabin or near the controls; and

    b. "Look Up and Live" and "No Go Zone" stickers be distributed to the owners of all registered tipper trucks (particularly semi tippers) capable of elevating higher than the minimum power line height requirements.

86. In the three deaths referred to above, I made a number of comments, relevantly including:

    a. I referred to the notion that workplace safety is the responsibility of all involved, and that each individual can play a role in a given situation;

    b. employers have common law and statutory obligations to their employees to provide them with a safe system of work; and

    c. employers have a range of measures open to them to ensure that their drivers are not uninformed and unsupported in the process of discharging their work duties in the safest possible environment. Such measures include the most basic of risk assessments of the immediate workplace environment.

87. I also made a number of recommendations, mostly concerning the production of signage which alerts a visitor/contractor to the presence and risks of over head power lines on a given property. Whilst this was contextually relevant to the three deaths subject of the Inquest, I am not certain whether signage at points of access and egress to Mr Hugh Geyer's farm would have necessarily prevented Mr Milnes' death. Both Mr Milnes and Mr Trevor Geyer were very familiar with the property, attending approximately on a weekly basis. It appears that, similar to what was found in the three other deaths, there was a level of complacency in relation to the danger of working in close proximity to overhead power lines.

88. I also recommended that evaluation of the efficacy, applicability and practicability of fitting proximity warning devices to tipper trucks be undertaken by WorkSafe and ESV.

RECOMMENDATIONS

Pursuant to section 72(2) of the **Coroners Act 2008**, I make the following recommendations connected with the three deaths I have been investigating:

I repeat the recommendation I made in the investigation in the deaths of Mr Dallas Anderson (COR 2006 0101), Mr Brian Baker (COR 2006 1427) and Mr John Jones (COR 2006 1546) and recommend that:

1. With the aim of minimising contact incidents with overhead power lines by tipper truck trailers, I recommend that WorkSafe and Energy Safe Victoria invest in the evaluation of proximity warning devices to determine their efficacy, applicability and practicability to tipper trucks.

2. I also recommend, that with the aim of minimising contact incidents with overhead power lines by tipper truck trailers, I recommend that WorkSafe and Energy Safe Victoria invest in the evaluation of methods to electrically insulate the tipper trailer in the event of power line contact by affixing a dry non-conductive material, as per the National Institute for Occupational Safety and Health's recommendation. This could be informed by the technical specifications for electrical insulation of elevated work platforms, as was contained in AS1418.10.

Pursuant to section 73(1) 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 individuals and agencies:

- Mrs Lisa Marie Milnes
- Alfred Health
- Catherine Belcher, Herbert Geer Lawyers - to be approved (acted in respect of claim made by wife on WorkSafe's behalf)
- WorkSafe Victoria
- Mr John Murphy on behalf of Energy Safe Victoria
- Powercor Australia Pty Ltd
- Transport Workers Union

- Australian Workers Union
- Detective Senior Constable Andrew Payne

Signature:

AUDREY JAMIESON
CORONER
Date: **26 March 2015**