MAGISTRATES COURT *of* TASMANIA

CORONIAL DIVISION

Record of Investigation into Death (Without Inquest)

Coroners Act 1995
Coroners Rules 2006
Rule 11

(These findings have been de-identified in relation to the name of the deceased, family, friends, and others by direction of the Coroner pursuant to s57(1)(c) of the Coroners Act 1995)

I, Robert Webster, Coroner, having investigated the death of EL

Find, pursuant to Section 28(1) of the *Coroners Act* 1995, that

a) The identity of the deceased is EL
b) EL died as a result of injuries he sustained in an accident at his workplace;
c) EL's cause of death was blast injuries which include an extensive subarachnoid haemorrhage and pulmonary haemorrhage; and
d) RL died on 1 May 2020 at 788 Liffey Road, Bracknell in Tasmania.

Introduction

In making the above findings I have had regard to the evidence gained in the comprehensive investigation into EL's death. The evidence includes:

- the Police Report of Death for the Coroner;
- affidavits establishing identity and life extinct;
- affidavit of Dr Andrew Reid forensic pathologist;
- affidavit of Mr Neil McLachlan-Troup, forensic scientist of Forensic Science Service Tasmania;
- affidavit of RT
- affidavit of Mr Daniel Morgan;
- affidavit of Mr Jonathon Lindsay;
- affidavit of Mr Rodney Gee;
- affidavit of Sergeant Stuart Greenwood;
- affidavit of First-Class Constable Martin Waddingham;

- affidavit of Senior Constable Peter McCarron;
- Worksafe Tasmania file which includes:
  i. statements of inspectors Steven Collins, Paul Hawkins and Sara Richards;
  ii. record of interview of Jonathon Lindsay;
  iii. statements of Robert Gee, Daniel Morgan, RT, Keith Murfet, Thomas;
  iv. Ruessman and Tyson Addicoat;
  v. photographs and other miscellaneous documents; and
- Photographs and forensic evidence.

This investigation concerns a workplace accident which occurred at the premises of Lindsay Transport (Tas) Pty Ltd (Lindsay Transport), 788 Liffey Road Bracknell on 1 May 2020. EL was fatally injured when a truck tyre he was inflating exploded under pressure thereby subjecting EL to significant force. The accident was investigated by WorkSafe Tasmania and my office was advised in early May this year that no charges were to be laid by the Office of the Director of Public Prosecutions (ODPP) against Lindsay Transport or any other person.

The *Coroners Act* 1995 (the Act) provides that because EL's death occurred at, or as a result of an accident or injury that occurred at, his place of work an inquest must be held[1]. An inquest is a public hearing. My decision to hold an inquest was communicated to the senior next of kin RT by letter of 26 July 2022. On 3 August 2022 an email was received from RT requesting me not to hold an inquest. Despite the mandatory requirement to hold an inquest the Act permits me to decline to hold an inquest if I am satisfied that it would not be contrary to the public interest or the interests of justice if the inquest were not held[2]. After considering the file I was satisfied it would not be contrary to the public interest or the interests of justice if the inquest was not held because the cause of EL's death is clear as are the circumstances in which it occurred. There are no suspicious circumstances and there are no issues associated with general public safety that require investigation. Accordingly I decided not to hold an inquest in this case.

Background

EL was born on the 20 March 1988 and he was 32 years of age, married and he resided with his wife and 2 young sons in Perth in northern Tasmania at the date of his death. RT says they had been together for about 14 ½ years and they were married in January 2012.

[1] Section 24(1)(ea).
[2] Section 26A(3).

EL was a mechanic by trade with some 17 years' experience. When he first met his future wife he was employed as an apprentice mechanic at Buckby Motors. RT says her husband was an extremely hard worker who was very dedicated to his work. He enjoyed working. When he was not at work he enjoyed working in his shed home. After completing his apprenticeship EL remained at Buckby Motors for a couple of years prior to moving to Flying Mile Mechanical in Longford as a mechanic where he worked for about 3 years. In 2014 EL moved to Cunningham Used Cars in Punchbowl as a mechanic and then he was promoted to the position of foreman.

While working for Cunningham Used Cars EL met Mr Lindsay and then he commenced doing contract work for Lindsay Transport as a mechanic at that company's depot. He continued working for Cunningham Used Cars while performing this contract work. He was then approached to take on some truck driving and as he wanted to try something new he began driving trucks for Lindsay Transport. In addition he performed any mechanical work that was required. He commenced on a full-time basis with that business in April 2018. He often worked long hours. A normal day commenced at around 4 AM and ended with him arriving home at about 7 PM although his hours varied depending on what work was required. RT says her husband enjoyed the truck driving side of his duties.

Mr Lindsay says EL was responsible for all the maintenance and repairs on Lindsay Transport's fleet of 5 trucks. His duties consisted of mechanical work, about 40% of his work and driving which accounted for about 60% of his work. Mr Lindsay was very satisfied with EL's work and says he was a very competent mechanic. He says EL worked about 12 hours a day but there was no set roster or times because it depended upon what work needed to be done. Mr Lindsay says maintenance on the trucks is performed on site in a large machinery shed and the company has all the equipment for basic mechanical maintenance to be performed. He says EL *"had good common sense and I trusted him to work alone and unsupervised. He came from a safety background having worked in dealerships and I had faith in his ability to do his work safely."*

EL had good general health. He had been diagnosed with irritable bowel syndrome however that did not *"slow him up"*[3]. He occasionally consumed beer but was always very careful to ensure it never impacted on his work. On the evening prior to his death EL advised his wife he had to do a repair of a truck in the morning and therefore he had to leave early.

[3] Affidavit of RT at page 2.

The Circumstances Surrounding EL's Death

On 1 May 2020 Mr Morgan and Mr Gee commenced work for Lindsay Transport and Cressy Chaff Cutters[4] respectively at approximately 6 AM. Mr Morgan came in early to wash his truck as it was due for repairs and EL's truck was going to be serviced. He drove into the yard and observed the lights already on in the workshop. He parked his vehicle and walked over to his truck and started it up and then he went over to EL's truck. He did not see EL but he could hear the compressor *"going flat out"*. He saw a tyre on the fitting machine which had blown and so the air which was being pumped into it was coming straight out. He then unplugged the airline from the valve. Next he saw EL lying on the ground. The jack stand was half underneath him. He went and found Mr Gee and telephoned emergency services. CPR was commenced and then Mr Gee telephoned Mr Lindsay. Mr Lindsay arrived followed by an ambulance.

After the paramedics arrived and took over treatment of EL, Mr Lindsay telephoned RT. He subsequently went with Mr Morgan to the hospital where they met RT and told her what had occurred.

Investigation

(i) Police

Constable Waddingham received a call to attend Lindsay Transport and arrived at those premises at 6:46 AM. He observed EL being attended to by a number of paramedics. At 7:18 AM life extinct was called. Constable Waddingham spoke to Mr Lindsay and then inspected the rim on the fitting machine which appeared to be in good condition and the tyre which had a large split in the side wall.

At 8:18 AM Sergeant Greenwood and Senior Constable Moir arrived at the scene to assist. Arrangements were made for a forensics officer[5] to attend and WorkSafe Tasmania were notified. On arrival both officers were briefed by Constable Waddingham. An investigation was then commenced. Sergeant Greenwood noted EL's employment and noted the shed in which he was found had no rear access and it was only capable of being entered via the front entry and roller doors. CCTV at the facility showed EL arriving at work at 3:39 AM on 1 May 2020 and entering the work shed. At 3:44 AM he is observed backing a truck into the service area of

[4] Cressy Chaff Cutters operate out of the same premises as Lindsay Transport: affidavit of Rodney Gee at page 1.
[5] Senior Constable McCarron.

the shed. This truck was used by EL as part of his duties with his employer. The next period of activity on the footage is at 6 AM when Mr Morgan and Mr Gee arrive at work. Nobody else enters the shed between 3:44 AM and 6 AM. Mr Morgan advised Sergeant Greenwood he could hear compressed air running and went to check on its source at which time he found EL. He then advised what he and Mr Gee did. Ambulance Tasmania was called at 6:01 AM. The truck was inspected and it was determined the rear centre outside wheel had been removed. Next to the truck tyre fitting machine was a large steel safety cage designed for use when changing tyres. Mounted on the machine was a large truck wheel rim and tyre with the tyre being partially off the rim. Not far from EL was a high pressure air hose and testing at the scene indicated the compressor attached to the air hose had a maximum inflation pressure of 150 psi[6]. The tyre had an obvious split and a scalloping or a gouge mark on the inner side wall. The gouge had a series of tears emanating from the rubber in an outward manner across the side wall. The split measured approximately 59 cm across the side wall and the area of the gouge measured approximately 10 cm across. The depth of the gouge was down to the plies which are commonly called wires. Road grime and dirt was visible in this area indicating it had not been recent damage. It appeared the sidewall had failed at this point and blown outwards. The injuries sustained by EL were noted as was the damage to his clothing.

Examination of the scene revealed:

- the collar from EL's work shirt was located on the top of a high shelf 4.5 m away;
- the pocket from EL's shirt was found embedded in the ceiling insulation 4.9 m vertically and 5.9 m diagonally above EL; and
- cotton fibres from the shirt were located as high 3.8 m high on the wall immediately behind EL.

Both Sergeant Greenwood and Senior Constable McCarron came to the view, after inspecting the scene, that there were no suspicious circumstances and nobody else was involved in EL's death. It appears EL arrived at work in the early hours and was in the process of changing a tyre but he did not use the safety cage when doing so. It seems when attending to this task EL was standing directly behind the tyre and as pressure has built in the tyre, the sidewall has failed and this has resulted in a massive explosive blast of air pressure and that and perhaps the tyre proper has struck him in the chest and killed him. The blast has knocked EL backwards onto

[6] PSI means pounds per square inch. It is the pressure resulting from a force of one pound-force applied to an area of one square inch. In SI units, 1 psi is approximately equal to 6895 Pa. The pascal (symbol: Pa) is the unit of pressure in the International System of Units (SI).

the ground. I accept the opinions of both Sergeant Greenwood and Senior Constable McCarron.

Discussions with both RT and Mr Lindsay revealed EL had previously damaged a rim on his truck. He had arranged for RT to purchase a rim and he was trying to fix the problem himself without worrying Mr Lindsay about it. On this day it seems he was fitting the damaged tyre to another rim he had borrowed and Mr Lindsay deduced he would have put that tyre and rim on the inside where it could not be seen. He would have then put a tyre on the new rim which had been purchased on the outside of the truck. It seems because of the accident he never got to finish this job. I did initially think the new rim was still in the boot of RT's car because she says, in her statement to WorkSafe Tasmania, to her knowledge it remained in her vehicle however the new rim was found in the workshop after the accident. Accordingly it appears EL had removed the new rim from his wife's vehicle that morning. Mr Lindsay believes EL was fitting the damaged tyre to the rim because it matched all the tread pattern on the other tyres on the truck. If he fitted a newer tyre then people might notice the difference in tread pattern. This way they would not as the tread pattern would be the same.

(ii) Worksafe Tasmania

Inspectors of this organisation examined the scene and took photographs, interviewed Mr Lindsay and took statements from RT, Mr Morgan and Mr Gee. Statements were also obtained from Mr Addicoat, Mr Murfet and Mr Ruessman. This investigation confirmed EL was employed as a mechanic, he was experienced and safety conscious. It was standard practice that if a tyre, including a sidewall to a tyre, was damaged it was to be reported to Mr Lindsay and that tyre then replaced. Mr Lindsay says he could not recall a previous incident where a sidewall had been damaged. Standard practice is to inflate a new tyre to 40 psi and then, in the tyre cage, inflating the tyre to the required pressure using a regulator. EL had however taken the air regulator (which would have measured the required psi) away shortly prior to this incident and put it on another smaller compressor. An airline not connected to a regulator was never used to inflate tyres. In addition there appeared to be an induction process and a safety procedure around tyre changing had been formally implemented since E'Ls death. That procedure essentially reflected what the general practice had been prior to this incident. Mr Lindsay says the practice was to use the tyre cage although he acknowledged it was possible this did not always occur. He also confirmed the air pressure regulator was not attached to the air hose on 1 May 2020. In addition they did not generally have safety or toolbox meetings but they did often catch up on a Friday afternoon.

Mr Addicoat is the service manager of Total Air which is a business in Launceston which sells and services air compressors. He was provided with an item in a sealed plastic bag and was asked by WorkSafe Tasmania inspectors to identify the item and then test it. He examined the article and identified it as a fixed pressure air filter which is designed to remove moisture and other fine solid particles from pressurised air. He says it is not designed to regulate or adjust the pressure flowing through it. He tested the gauges on the filter and confirmed they were both calibrated. He then connected an airline to the filter which determined the air pressure entering the filter was 150 psi and the same reading was measured for air leaving the air filter. This device which was attached to the compressor used by EL therefore limited the air pressure going through it to 150 psi.

Keith Murfet is a director of the business known as Tyreright which is based in Launceston. He has been working in the tyre industry for approximately 40 years and commenced as a tyre fitter at 15 years of age. He says there are no industry standards for fitting/inflating tyres and there are no approved or certified training courses in Tasmania. What standards or safety policies are in place are up to individual businesses to implement. He says it is widely known by people in the industry that tyre gauges/regulators and tyre cages should be used when inflating heavy vehicle tyres. He therefore confirms EL's understanding of the use of these items which is explained by Mr Morgan below.

Mr Morgan says in a supplementary statement he was aware that prior to the incident EL had removed the air regulator from the wall behind where the tyre fitting machine was located. Prior to its removal he had used it to change or repair truck tyres. The regulator had been set at 30 psi. Once inflated to that level Mr Morgan says he would remove the tyre from the tyre fitting machine and place the tyre in the tyre cage to further inflate the tyre to either 90 psi or 110 psi as needed. This is how he says he had been taught or trained to change tyres by EL.

Mr Ruessman is a qualified automotive technician employed by Goodyear Dunlop Tyres Australia as a customer engineer. He has been employed in this position for in excess of 15 years. As part of his role he conducts warranty adjudications and tyre analysis, product testing and competitor analysis, technical and product training to the tyre industry and he represents his employer on various industry associations including the Technical Subcommittee of the Australian Tyre Industry Council. He inspected the truck tyre involved in this case and prepared a report. He understood an incident occurred which damaged the wheel rim and tyre which required replacement of the rim. The tyre was then mounted on another used rim and refitted to a truck and was in service for a period until a new rim was obtained. The tyre was

inspected and found to be 50% worn with a remaining tread depth which met road worthiness requirements. The damage previously described, that is the gouging or scalloping was noted. Mr Ruessman says this damage is not consistent with damage that may be sustained when a sidewall rupture occurs in the course of mounting and inflation. He thinks it most likely occurred during an incident where there was contact or impact with an external object. The damage was not repairable, rendered the tyre unroadworthy and it needed to be removed from service. In addition he noted the sidewall rupture which ran through the previously damaged area but he says it is clear the 2 forms of damage occurred at different points in the tyre's life. Neither condition was attributable to a manufacturing or material defect nor any other warrantable condition. As a result of his examination he says the rupture occurred when the tyre inflation pressure forces exceeded the tensile strength of the tyre's body ply cords. He says a truck tyre's body ply cords are made of rubber coated steel wires approximately 0.5 – 1.5 mm in diameter which run radially up the sidewall. They are equally spaced, approximately every 2 – 4 mm around the circumference of the tyre. The ply cords serve a number of functions but in this case they reinforce the rubber component in the tyre sidewall to contain the stored energy that exists within a tyre when it is inflated.

Mr Ruessman says if the inflation pressure exceeds the tensile strength of the ply cords, one cord will fracture which transfers the load onto the fatigued adjacent ply cords, which in turn fracture and load their adjacent cords. These fractures occur in rapid succession travelling outwards in both directions from the point of initiation and, without any reinforcement from the body ply, the sidewall ruptures and the compressed air is rapidly discharged. In this case he says fatigue in the ply cords could have occurred during the initial contact with the external object, after the tyre was put back into service on the borrowed rim and/or operating in an under inflated state any time between the initial impact damage and when the tyre was being fitted to the new rim.

He confirms industry guidelines exist to control risks during truck tyre inflation which include truck tyres being inflated in a safety cage, personnel remaining outside the tyre trajectory zone during inflation and inflation being carried out using an in-line pressure gauge and control valve with a hose long enough to permit inflation outside the trajectory zone. In this case he notes no pressure gauge or regulator was used which would result in the operator not being able to determine what the inflation pressure of the tyre is at any point during the inflation, resulting in inflating the tyre to the maximum pressure capability of the air compressor and potentially affecting the ability to stop inflation and, if necessary, deflating the tyre. He noted the maximum

pressure capability of the compressor was 150 psi which is approximately 50 psi higher than the typical industry inflation pressure for this type of tyre and 27 psi higher than the inflation pressure required for this tyre to carry its maximum load. Because the tyre had remained intact prior to this point in time he says it is likely the inflation pressure applied exceeded the pressure it had been subject to previously. Accordingly he concluded the rupture occurred due to a combination of tyre fatigue and over inflation.

The investigation file was examined by the ODPP and advice was provided in January this year to WorkSafe Tasmania for further evidence to be obtained. After reviewing the matter and considering the further evidence which was obtained the advice of that office was no charges were recommended under the *Work Health and Safety Act* 2012

(iii) Post-Mortem Examination

A post-mortem examination was conducted by the forensic pathologist, Dr Andrew Reid on 4 May 2020. The post mortem consisted of an internal and external examination, histological examination, toxicological examination and a post-mortem CT scan. As a result of considering the results of those examinations Dr Reid concluded EL's cause of death was blast injuries due to or as a consequence of explosive tyre decompression.

The autopsy revealed subarachnoid and subdural haemorrhage and widespread significant parenchymal and sub pleural haemorrhages in the lungs which were confirmed on histology. Mediastinal haemorrhage was also seen macroscopically and thymic and epicardial haemorrhage was seen histologically.

Dr Reid says *"[i]nterstitial haemorrhage and oedema were also seen histologically. The appearances are consistent with* ***primary blast or explosive injuries*** *during which explosive decompression or a pressure wave, from an explosive device or another source of significant pressure, causes tearing and damage to the soft tissues of the mediastinum and lungs. Explosive forces may also cause* ***secondary blast injuries*** *in which the victim is struck by other objects and/or* ***tertiary blast injuries*** *if the victim is propelled against objects at the scene of the explosion."*

A post-mortem CT scan confirmed changes consistent with pulmonary haemorrhage and this was confirmed histologically. Dr Reid says ordinarily blast injuries cause a *"butterfly"* appearance on plain chest radiography. However, most of the descriptions of blast related lung injury relate

to survivors of improvised explosive devices (IED) in a military context and some survivors of terrorist incidents. A post-mortem CT scan showed changes consistent with intra-pulmonary haemorrhage. The absence of a classic *"butterfly"* appearance, in this case, may be due to post-mortem changes and/or other differences in post-mortem radiographic appearances compared to those which might be seen in ante-mortem radiography of explosion survivors.

Dr Reid says the subarachnoid haemorrhage may have been caused by the primary pressure wave or it may have been caused by the head striking the ground or other object by way of a secondary or tertiary explosive injury. He notes though there was no evidence of an underlying aneurysm and there was no evidence of any skull fracture which would have caused either this subdural haemorrhage or the subarachnoid haemorrhage. Diffuse vascular brain injury was also seen on histology.

He concludes by saying *"[p]rimary, secondary and tertiary blast injuries contributed to the pattern injuries which caused this man's death. Explosive tyre decompression was the source of the explosive pressure wave."*

I accept the opinion of Dr Reid.

(iv) Toxicology

No alcohol or illicit drugs were detected on toxicology. I agree with Dr Reid's conclusion that forensic toxicology was not contributory to the causal circumstances of EL's death.

Comments and Recommendations

EL was a very experienced and safety conscious mechanic. He was very well respected by his employer, he was diligent and hard-working. During the course of his work I am satisfied he accidentally damaged a rim and a tyre on his truck. It is not known when or how this occurred. It seems EL borrowed a rim and subsequently had RT purchase a new rim rather than advise his employer of this damage. On 1 May 2020 EL removed a wheel from the truck and mounted a rim and a tyre onto a wheel changing machine. This tyre, which was damaged, was inflated to the point where it burst causing blast injuries which led to EL's death. Despite EL's experience he made the decision to inflate a faulty tyre on a rim without using a safety cage, which was

available, and without using a regulator on the airline which would have controlled the extent of the pressure used to inflate the tyre.

This case serves as a timely reminder that a failure to follow basic safety procedures, even by experienced and ordinarily safety conscious employees, can have tragic consequences.

The circumstances of EL's death are not such as to require me to make any comments or recommendations pursuant to Section 28 of the *Coroners Act* 1995.

I extend my appreciation to investigating officer First Class Constable Waddingham for his investigation and report.

I convey my sincere condolences to the family and loved ones of EL.

Dated: 19 October 2022 at Hobart in the State of Tasmania.

Robert Webster
Coroner