CORONERS COURT
OF NEW SOUTH WALES

Inquest:	Inquest into the death of Brandoli POU
Hearing dates:	7 – 10 February 2017
Date of findings:	16 March 2017
Place of findings:	State Coroner's Court, Glebe
Findings of:	Magistrate Elizabeth Ryan, Deputy State Coroner
Catchwords:	CORONIAL LAW – Cause and manner of death – severe chest injuries - industrial accident - struck by heavy lifting machinery – whether employee adequately trained in operation of cranes – whether safe operating procedures adequate and complied with – recommendations.
File number:	2013/333207
Representation:	Mr M Cahill: Counsel Assisting the Coroner instructed by Ms J Geddes, Crown Solicitor's Office. Mr R Warren: Counsel for Southern Steel Group Pty Ltd instructed by Mr M Diamond, Mark Diamond & Associates. Mr D Chin: Counsel for Safework NSW instructed by Ms A Wong, Safework NSW. Mr S Hardy: Solicitor for Konecranes Pty Ltd. Ms J Curtin: Counsel for Mr M Cyrta.

Findings:	The person who died was Brandoli Pou. He died on 4 November 2013 at Liverpool Hospital. The cause of death was severe chest injuries, which Mr Pou sustained when he was struck with a heavy magnetic lifter. The manner of Mr Pou's death was a workplace accident arising from a colleague's loss of control of the operation of equipment.
Recommendation 1:	**Keeping loads under travel in sight at all times** *Southern Steel Group Pty Ltd give consideration to including in the Southern Steel Group Work Instruction 'Safe Operating Procedure for Overhead Cranes' the requirement that the load shall be constantly in view of the operator when being moved.*
Recommendation 2:	**Stopping the crane if incapacitated** *Southern Steel Group Pty Ltd give consideration to including in the Southern Steel Group Work Instruction 'Safe Operating Procedure for Overhead Cranes' and 'Do's and Don'ts of Steel Handling' the requirement that if an operator becomes incapacitated through injury or illness whilst operating a crane and unable to continue crane-operating duties, the crane must be stopped and the matter reported to a supervisor.*
Recommendation 3:	**The term 'load' includes anything suspended from the crane hook.** *Southern Steel Group Pty Ltd give consideration to providing in its 'Safe Operating Procedure' and 'Do's and Don'ts of Steel Handling' documents that the term 'load' includes any item suspended from overhead cranes, including all crane accessories and lifting equipment.*

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Section 81(1) of the Coroners Act 2009 (NSW) *requires that when an inquest is held, the coroner must record in writing his or her findings as to various aspects of the death.*

These are the findings of an inquest into the death of Brandoli Pou.

Background

1. On 4 November 2013, twenty-nine year old Brandoli Pou was working a morning shift at his workplace in Milperra Sydney when he was struck by a heavy piece of equipment being operated by a colleague.

2. Mr Pou fell to the ground and could not be revived with first aid assistance. He died soon afterwards at Liverpool Hospital.

3. Mr Pou's wife Nicole Crawford, his mother Ms Aeng Touch and his sisters attended each day of this inquest, supported by other close family members. Heartfelt statements about Brandoli Pou's life and character were made by his wife and, on behalf of Mr Pou's family, by his sister Amanda. They described a bright, healthy, positive young man who enjoyed life and who loved his wife and family very much. Mr Pou was clearly cherished by his wife and family, and they grieve his loss deeply.

4. The Court heard that Mr Pou was the eldest son of Ms Aeng Touch who migrated to Sydney from her native Laos.

5. When Brandoli Pou was 20 years old he met Nicole Crawford who was working as a paralegal at a Sydney law firm. They soon became a couple and, surrounded by family and friends, they married nine years later in a ceremony in Thailand. In 2013 Brandoli and Nicole had plans to buy a house and start a family. In the meantime they lived with Mr Pou's mother Aeng and his sister Amanda.

6. In July 2006 Mr Pou started work as a machine operator at Southern Steel Group Pty Ltd in Milperra. Southern Steel Group Pty Ltd [SSG] is a steel processing and distribution company which supplies steel to businesses throughout Sydney. As at the date of the incident SSG operated five sites in NSW, of which its Milperra plant was the largest, employing 80 of its 126 workers.

7. Mr Pou enjoyed his work and often discussed it with his wife. In November 2012 he was promoted to the position of Leading Hand and supervisor in the Plate Profiling section. He was responsible for supervising two areas of the factory and allocating jobs to eight men, as well as operating his own machine.

8. The incident which took Mr Pou's life occurred in the Plate Profiling section of the Milperra factory. Mr Pou was fatally struck on the chest by a magnetic lifting device, which was attached to an overhead crane being operated by Mr Pou's colleague, Mr Mariousz Cyrta.

The Inquest

9. Section 81 of the *Coroners Act 2009* requires a coroner presiding over an inquest to confirm that the death occurred and make findings as to:-

- the identity of the person who died
- the date and place of the death
- the cause and manner of the death.

10. In addition under section 82 of the Act a coroner may make such recommendations considered necessary or desirable in relation to any matter connected with the death, including in relation to health and safety.

11. Mr Pou's identity, where he died and the date of his death are not in issue. Nor is the medical cause of his death, which was severe chest injuries, in issue.

12. The evidence at inquest as to the cause of death supported the findings of Dr Liliana Schwartz. In a post-mortem examination on 7 November 2013, Dr Schwartz observed the left side of Mr Pou's chest was bruised and there were abrasions on his left arm. She found his sternum was fractured and muscles behind his ribs were torn. There were injuries to his heart, and Mr Pou's left main bronchus and left main pulmonary artery had been severed. Dr Schwartz did not identify any antecedent causes of death or other contributing factors.

13. The purpose of this inquest has been to provide a greater understanding of the manner of Mr Pou's death, that is, the circumstances in which he received his fatal injuries. The inquest has also focused on whether any improvements should be considered for the protection of those working at SSG.

14. Mr Pou's wife and family have expressed concerns that his fatal injury occurred in circumstances where Mr Cyrta, the worker who had been operating the magnetic lifter, did not properly observe procedures designed to keep workers safe. They have also voiced concerns about the adequacy of training which SSG provided to its crane operators, and its response to previous safety incidents.

15. The issues list distributed by those assisting the inquest identified the following five matters as warranting attention:

    1. The manner in which Mr Pou came to be struck by the magnetic lifter.
    2. Whether there was any failure to comply with policies, procedures or other systems of SSG that contributed to Mr Pou's death.
    3. Whether Mr Cyrta was adequately trained in operating the crane and magnetic lifter.
    4. Whether there are any changes to policies or procedures of SSG which if implemented could have prevented Mr Pou's death.
    5. Whether there are any alterations in the design of any machinery that could have prevented Mr Pou's death.

16. As the evidence unfolded over the four days of the inquest it is fair to say that the two issues which emerged as critical were these: the manner in which Mr Pou came to be struck by the magnetic lifter, and whether there was any failure to comply with policies, procedures or other systems of SSG.

The manner in which Mr Pou came to be struck by the magnetic lifter

17. To describe what happened to Mr Pou I need to briefly explain some of the equipment used in the Plate Profiling section and how it worked.

How the crane and magnetic lifter worked

18. In SSG's Plate Profiling section at Milperra workers operated three automated oxy-cut metal cutting machines. These were used to cut components from flat plates of steel. They are known as machine 1, machine 2 and machine 3. The machines were oriented north-south and they sat adjacent to each other on the factory floor, with Machine 3 at the western-most end of the area.

19. Machine 1 was usually operated by Mr Pham Vo, also known as Peter Vo. Machine 3 was operated by Mr Trung Lam and machine 2 by Mr Mariousz Cyrta. For some years all three men as well as Mr Pou had been employed as machine operators at SSG. From 2010 onwards they worked a regular morning shift together starting at 6am.

20. The three oxy-cut machines were serviced by two electric overhead travelling cranes, known as Cranes 25 and 26. The cranes were designed, manufactured and installed by Konecranes Pty Ltd.

21. Crane 26 is the crane involved in this incident. It is a single girder dual hoist bridge crane which travels on tracks in an east-west direction along the factory ceiling. This movement is known as its long travel function. Crane 26 has a trolley from which its lifting device is suspended. The trolley moves along Crane 26's bridge in a north-south direction. This is known as the crane's cross travel function.

22. At the time of the incident Crane 26 was fitted with a red coloured magnetic lifting device. The magnetic lifter was suspended from the trolley of Crane 26 by a hook and chains and it weighed 285 kilograms. It was used mainly for lifting finished jobs from the oxy-cut machines and disposing of steel plate offcuts.

How the remote control worked

23. The movement of Crane 26 and its attached magnetic lifter was operated by a remote control transmitter, which itself weighed 1.45 kilograms when fitted with batteries. The remote control had a waist belt to secure it to the operator's body. However the court heard it was accepted practice at SSG for the operator to instead hold the remote control by its side handles and manipulate its two joysticks using thumbs.

24. The remote control's two joysticks operated the crane as follows:

- If moved in the direction of the operator, the left-hand joystick moved Crane 26 in an easterly direction. When pushed away from the operator the left-hand joystick moved Crane 26 in a westerly direction.

- If moved to the operator's left, the left-hand joystick moved the trolley on Crane 26 in a northerly direction. When pushed to the operator's right, it moved the trolley in a southerly direction.

- When used for long travel Crane 26 moved at two pre-set speeds: 'creep speed' and maximum speed. At creep speed the crane moved 16 metres per minute; at maximum speed it reached 63 metres per minute. The speed corresponded to the force applied to the joystick. Thus the crane achieved maximum speed when the joystick was pushed to its extremity.

- In order to stop the crane's movement the operator removed their finger from the left-hand joystick. However due to the crane's momentum it would still travel a certain distance while it decelerated to a full stop. This was known as its stopping distance. When Crane 26 was being travelled at maximum speed the stopping distance was estimated to be approximately 4 metres.

- The right-hand joystick was used to raise and lower the attached magnetic lifter.

25. The remote control box was also fitted with an emergency stop button. The court heard that by using the emergency stop button an operator was able to reduce the stopping time and distance for Crane 26; however there would be increased load swing.

Eye-witness accounts

26. On the morning of the incident police obtained statements from witnesses who had observed the fatal impact. These included Mr Vo, Mr Cyrta, and a truck driver Mr John Vassilokoglou. They described what happened as follows.

27. At about 6am on 4 November 2013, morning shift workers in the Plate Profiling section commenced to set up their machines for the day's work. Mr Lam was preparing to operate oxy-cut machine 3. Mr Cyrta had commenced operating machine 2.

28. Mr Vo arrived at work at about 6.10am and was rostered as usual to operate machine 1. On arrival he had a conversation with Mr Pou about the day's work. The two were standing quite close to machine 1. Mr Vo had his back to where Mr Cyrta was working at machine 2, while Mr Pou was faced in Mr Cyrta's direction.

29. Mr Cyrta wanted to use Crane 26 to remove a small piece of offcut steel from the cutting bed of machine 2. He positioned himself between machines 2 and 3, then operated the remote control to move Crane 26 from its parking point near machine 1. He was holding the remote control by its handles, and using his thumbs to manipulate its joysticks.

30. Mr Cyrta moved Crane 26 to a point located above machine 2, then lowered the red magnetic lifter to about waist height. According to Mr Cyrta, very shortly afterwards the fingers of his left hand were suddenly struck with a cramp.

31. I note at this point there is a divergence in Mr Cyrta's evidence about what he was doing before the arrival of the cramp. In his oral evidence at the inquest Mr Cyrta said he had already used the crane and magnetic lifter to dispose of the offcut when the cramp struck.

32. However this is not consistent with versions which Mr Cyrta provided on the morning of 4 November, or with what he told Inspector Kate Allen of Safework NSW on 17 November 2013, or in a second statement he provided on 23 January 2017. In all these versions Mr Cyrta stated the cramp struck just before he lowered the magnetic lifter to pick up the offcut. He made no reference to having already disposed of it.

33. Be that as it may, in all accounts Mr Cyrta stated that he suddenly suffered a cramp in his left hand. In his statement of 4 November he described the events as follows:

'I have a problem with cramps. I have had this problem for a few years. When I get the cramps I need to use my right hand to straighten out my left fingers. I was holding the remote control by the handles. I continued to operate the joystick with my left thumb. I put my left fingers up against my body to straighten them out and fix my hand. It was about two seconds and I heard a big bang. I did not see the magnet when I heard the bang as I was fixing my fingers. I looked up and I saw there was a guy on the concrete next to machine 1. The magnet was at the bin next to machine 1 which was just in front of the guy on the concrete. The magnet was swinging in the air.'

33. The man lying on the concrete next to machine 1 was Mr Pou.

34. In Mr Peter Vo's account given to police that morning Mr Vo also described hearing a loud bang. It came from behind where he was standing near machine 1 in conversation with Mr Pou. Mr Vo took shelter under a nearby table, then turned and saw Mr Pou running towards a yellow waste bin. Mr Vo stated that Mr Pou had nowhere to move. Mr Vo saw the swinging red magnetic lifter strike Mr Pou in the chest area, then Mr Pou fell to the ground.

35. The fatal impact was also witnessed by a truck driver Mr John Vassilokoglou, who was sitting in his parked truck nearby. Mr Vassilokoglou could not give evidence at the inquest because he died not long after these events. However in a statement he gave to police on 4 November 2013 he described hearing a loud bang and looking up to see Crane 26 moving in an easterly direction, with its attached magnetic lifter swinging in a north-south direction. He saw Mr Pou and Mr Vo running for cover. He then saw the magnetic lifter change its movement to a rapid swing in an east-west direction, still following the moving crane. Mr Pou had run towards a waste bin, but he was struck by the magnetic lifter and fell to the ground.

36. Mr Pou's workmates immediately called an ambulance. A colleague commenced CPR until the ambulance arrived at 6.35am and its officers assumed treatment of Mr Pou. Mr

Cyrta and Mr Vo were both in a state of shock, with Mr Cyrta needing to be treated at the scene by paramedics.

37. Mr Pou was taken to Liverpool Hospital but he died soon after arrival.

38. That morning Mr Pou's wife Nicole and his sister Amanda were travelling by train to work in the city. At about 8am Ms Crawford received a phone call from Mr Sam Mounem, the General Manager of the Milperra factory, telling her that her husband had been seriously injured. In great distress Ms Crawford and Ms Pou made their way to Liverpool Hospital where they received the terrible news of his death.

SSG's accident investigation

39. Shortly after the incident SSG's National Safety and Quality Manager Mr Adrian Marino conducted an accident investigation. He interviewed witnesses, visually inspected machines 1 and 2, and tested the equipment involved. In his report dated 6 December 2013 Mr Marino reached the following conclusions:

- While operating Crane 26 that morning Mr Cyrta had lost control of it, causing its unloaded magnetic lifter to collide with machine 1.

- After the collision, Crane 26 continued to move eastwards causing the magnetic lifter to be dragged across the bridge of machine 1 and inflicting damage to machine 1's control box.

- The magnetic lifter freed itself from machine 1 and began to swing, following Crane 26 which continued to move eastwards.

- The swinging magnetic lifter struck Mr Pou where he had tried to take cover near a waste bin slightly south-east of machine 1.

- After striking Mr Pou the magnetic lifter came to rest at a point about 10 metres to the east of machine 1.

- Throughout this journey the magnetic lifter was being travelled at a height of about 1.2 metres from the ground.

40. Mr Marino and a Konecranes technician carried out some tests to try to determine the length of time it had taken Crane 26 to travel to its resting place from its presumed starting point above machine 2. According to Mr Cyrta this was the point at which his hand cramp struck. Mr Marino concluded as follows:

- Assuming it had been travelling at maximum speed Crane 26's journey from machine 2 to its resting place would have taken about 7-10 seconds.

- During this period the left hand joystick must have been activated for at least 5-8 seconds. The remaining seconds are accounted for by the time required for Crane 26's stopping distance.

41. It must be presumed that if Crane 26 was being travelled at less than maximum speed, the above periods of time would be longer.

Mr Vo's subsequent accounts

42. After giving his statement to police on 4 November 2013 Mr Vo provided subsequent accounts in which he made a number of additions and accretions to his original statement. These were made in an interview with Inspector Kate Allen of Safework NSW on 11 March 2014, in a second statement he gave to police on 15 December 2015, and in his oral evidence at the inquest.

43. The contents of Mr Vo's subsequent accounts provided much of the focus of this inquest. This is because in these later accounts Mr Vo made serious allegations about Mr Cyrta and SSG. These may be summarised as follows:

- On 4 November both he and Mr Pou saw the magnetic lifter collide with machine 1. They called out to Mr Cyrta to stop the crane while they tried to disentangle it. But Mr Cyrta ignored them and continued to travel the crane.

- Before he gave his statement to police on the morning of 4 November, Mr Vo together with Mr Cyrta were called to a meeting with the General Manager Sam Mounem. The company owners Peter, Elaine and Kevin Smaller were also there. Mr Mounem told Mr Vo and Mr Cyrta to *'keep it simple'* in their accounts of the incident, and to not make trouble for the company. This was why his original statement contained less detail than his subsequent accounts.

- Mr Cyrta was known as '*the dangerous man'* because of his track record of operating the cranes in an unsafe way. He had once driven a large steel plate over Mr Vo's head without warning. Mr Vo had verbally reported this to Mr Bill Yang the Production Manager.

- Mr Vo had made a number of complaints to SSG management about Mr Cyrta's practice of operating Crane 26's remote control by holding it by the handles instead of using the waist belt. Management had ignored his reports.

- On many previous occasions Mr Vo had seen Mr Cyrta moving the magnetic lifter at an unsafe height, causing it to collide with machinery. There was no point reporting this conduct to management because they did not take it seriously.

Evaluation of Mr Vo's evidence

44. In the above accounts Mr Vo made serious allegations about Mr Cyrta's competence to operate cranes and SSG's previous response to alleged safety breaches.

45. However in his very comprehensive closing address, Counsel Assisting the Coroner submitted that Mr Vo's evidence should be treated with caution.

46. Having heard Mr Vo's oral evidence at the inquest, and evaluated it and his various statements in light of the evidence as a whole, I accept this submission. My reasons are as follows.

47. Mr Vo's explanation for the absence in his first statement of the above allegations is that prior to speaking to police on 4 November, he was told by SSG management to avoid making trouble for the company. However the inquest was provided with statements of Mr Mounem, Mr Smaller and Mr Cyrta denying that any such meeting occurred. When questioned about this by Counsel for Mr Cyrta, Mr Vo stated he must have been mistaken and that the direction from SSG management took place after he had given his police statement. The effect of this shift in Mr Vo's testimony is to leave unexplained the absence in his original statement of the matters he raised in his subsequent accounts. It also casts doubt upon the reliability of his evidence in general.

48. Mr Vo's oral evidence was afflicted with a number of implausibilities. One example is his assertion that some three to four minutes elapsed between the magnetic lifter hitting machine 1 and striking Mr Pou. The evidence at inquest leaves no room for doubt that in fact these events took place in a matter of seconds.

49. Similarly Mr Vo's assertion that Mr Cyrta had previously operated the cranes in an unsafe manner and that he had made reports about this, was not borne out by the evidence as a whole. The evidence of SSG's Milperra Production Manager Mr Bill Yang, Operations Manager Mr Jimmy Zhu, and National Safety Manager Mr Adrian Marino was that they had never received an oral or written complaint from Mr Vo or anyone else that Mr Cyrta had operated machinery in an unsafe manner. All these witnesses, as well as fellow crane operator Mr Trung Lam, denied that Mr Cyrta was known in the workplace as *'the dangerous man'.*

50. Nor did the objective evidence support Mr Vo's allegation that SSG did not respond appropriately to previous safety incidents. This issue and consideration of whether any changes to SSG's procedures is warranted, is addressed later in this report. At this point it is enough to observe that the evidence establishes that at the time of the incident SSG had in place an effective safety management system. This included formal documented safe operating procedures for the use of overhead cranes and magnetic lifters, inductions for new workers, regular training, and Toolbox and Safety Committee meetings. It also included a system for workers to report safety incidents, and a procedure for such reports to be reviewed and practices amended if appropriate.

51. The conclusion I have reached is that Mr Vo's evidence about what happened on 4 November, and his evidence about SSG's poor safety culture, is characterised by inconsistencies and implausibilities such that little weight can be placed upon it, with the exception of the account he gave to police within hours of the incident itself.

52. As a result I am unable to accept Mr Vo's evidence that when Crane 26's magnetic lifter collided with machine 1 he and Mr Pou called out to Mr Cyrta to stop operating the crane while they tried to disentangle it. Nor am I able to accept his allegations that Mr Cyrta had a track record of operating the cranes and magnetic lifters in an unsafe manner.

53. It is not clear why Mr Vo has made adverse comments about Mr Cyrta and SSG. Of relevance however is a medical report of psychiatrist Dr Tom Lieng which was tendered at the inquest. Dr Lieng's report followed his examination of Mr Vo on 3 February 2014, in which he found Mr Vo to be suffering acute stress disorder as a result of witnessing Mr Pou's death. Mr Vo displayed features of thought disorder, paranoia and mania. He continued to relive the incident and to see distressing images of Mr Pou.

54. The inquest also heard that in the three years since the incident Mr Vo has been too unwell to return to work and that he continues to be under psychiatric care and on medication.

55. The fact that as a result of this tragic event Mr Vo continues to suffer such impaired mental health, is testament to the profound and ongoing impacts that Mr Pou's death has had on so many people.

Mr Cyrta's evidence

57. Unfortunately the Coroner's task of making findings as to how Mr Pou came to be struck by the magnetic lifter was not assisted by the evidence of the only other surviving eye witness, Mr Cyrta.

58. Mr Cyrta made a statement to police on the morning of 4 November 2013, part of which appears at paragraph 32 above.

59. Like Mr Vo, Mr Cyrta provided subsequent accounts of what happened. In his Accident Investigation Report Mr Marino recorded that Mr Cyrta told him:

    '..he was holding the remote control box in both hands when he got a severe cramp in his left hand while operating the crane while attempting to pick up the offcut from Machine 2's bed. Mariousz said in his statement to me the cramp caused him to remove his left hand from the remote control box …after getting the cramp he tried stretching his hand against his body and he does not know what he did with his other hand while this was happening. The next thing he heard a loud bang …'

60. In a statement made with the assistance of his legal representative on 23 January 2017 Mr Cyrta said:

    'I stopped operating the crane from the moment I was stretching out the fingers of my left hand. As soon as I heard the big bang sound I put the remote control down and ran in the direction of Machine 1…'

61. Mr Cyrta also gave oral evidence at the inquest. When he was asked questions about the manner in which he had operated Crane 26 on 4 November, Mr Cyrta sought and was granted a certificate under section 61 of the *Coroners Act 2009*. The effect is that his evidence at inquest in response to questions on this topic is unable to be used against him. The exception is of course, in proceedings in respect of giving false evidence.

62. In his oral evidence Mr Cyrta claimed that immediately after the incident, apart from remembering the severe pain of the cramp, he had no memory of what he had done from the moment the cramp arrived until the moment he heard the big bang. He asserted that where in previous accounts he had described things he had done over this critical period, he was in fact reconstructing them using other information he had heard. In other words, what he had been describing was based on supposition and not actual memory of what he had done.

Evaluation of Mr Cyrta's evidence

63. In his closing address Counsel Assisting the Coroner submitted that Mr Cyrta's evidence needed to be treated with caution, in particular his assertion that he had never had any memory of what he did after his cramp struck.

64. Although in his interview with Inspector Allen Mr Cyrta said he could not remember how he had operated the crane, it can be seen that at other times he has been able to describe some of his actions. On none of these occasions did he explain that what he was describing was mere supposition and that he had no actual memory of what he had done. For this reason I agree it is difficult to accept his claim at the inquest of absence of memory.

65. Furthermore it can be seen that Mr Cyrta's previous accounts themselves contain inconsistencies. One example is his claim in his January 2017 statement that he stopped operating Crane 26 from the moment he was stretching his left fingers. This statement is inconsistent with his contemporaneous account on 4 November 2013, namely that he '*continued to operate the joystick'* after his cramp struck.

66. In addition it is inconsistent with other evidence available to the inquest, which strongly supports the proposition that Mr Cyrta continued to operate Crane 26 after his cramp struck and indeed for several seconds after the magnetic lifter had struck machine 1. I address this further at paragraph 72 of this report.

67. For these reasons I accept the submission of Counsel Assisting that the Court would have strong reservations about the reliability of Mr Cyrta's documentary and oral evidence.

68. However it does not follow that the Court is unable on that account to draw any conclusions about the manner in which Mr Pou came to be struck by the magnetic lifter. I set out below the findings which in my view are able to be made, and my reasons.

Findings about the manner in which Mr Pou came to be struck by the magnetic lifter

69. It is obvious from the eye witness accounts that Mr Pou was struck by the magnetic lifter as a result of the way in which it was operated by Mr Cyrta.

70. Specifically, Mr Cyrta caused the following movements of Crane 26 and its magnetic lifter to happen:

    - From its position above machine 2 Crane 26 was moved in a south-easterly direction. Its magnetic lifter was propelled some 6-7 metres towards machine 1, colliding with it.
    - The magnetic lifter was dragged across the bridge of machine 1, damaging some of machine 1's components.
    - Crane 26 continued to move in a south-easterly direction, pulling the magnetic lifter free of machine 1 and causing it to swing.
    - The swinging magnetic lifter fatally struck Mr Pou at a point south-east of machine 1.
    - Crane 26 came to a final stop 10 metres east of machine 1.

71. The evidence about Crane 26's physical movements when combined with other evidence enables the Court to make certain factual findings as to the manner in which Mr Cyrta operated it.

72. First, contrary to what he asserted in his statement of 23 January 2017 it is clear Mr Cyrta continued to operate the remote control after the onset of his cramp, and even after the magnetic lifter had struck machine 1. This finding is based on the following propositions which the evidence strongly supports:

    - After the magnetic lifter struck and then disentangled itself from machine 1, Crane 26 travelled a further 10 metres east before coming to a final stop.
    - Approximately 4 metres of this 10 metre distance can be accounted for by Crane 26's stopping distance, leaving a 6 metre journey during which it must be assumed Mr Cyrta continued to operate the remote control.
    - Since at maximum speed Crane 26 moves at 63 metres per minute, it can be assumed Mr Cyrta continued to operate the remote control for at least 6 seconds after the magnetic lifter became free of machine 1.

73. Secondly it is to be inferred that once the cramp struck, Mr Cyrta removed his attention from the movement of the magnetic lifter. I base this upon the contents of his 4 November statement, in which he said:

‘I did not see the magnet when I heard the bang as I was fixing my fingers. I looked up …’

74. This information was provided within hours of the incident, and for this reason has a greater claim to reliability than do Mr Cyrta’s subsequent accounts. I note Mr Cyrta did not in any account claim to have been watching the movement of the magnetic lifter once his cramp had struck.

75. Thirdly, the undisputed evidence is that throughout its journey from machine 2 to its impact with Mr Pou, the magnet was travelling at a height of about 1.2 metres, over an area where people and machinery were present.

76. Based on the above, the following conclusions can be drawn about the manner in which Mr Cyrta operated Crane 26:

- After the onset of his cramp Mr Cyrta did not immediately take steps to stop the movement of Crane 26.

- The magnetic lifter was travelled at a height of approximately 1.2m over an area where people and machinery were present.

- For most if not all of that journey Mr Cyrta did not have his sight on it.

77. Mr Cyrta’s evidence at the inquest that he was unable to recall anything about these matters does not prevent the Court from making the above findings. For the most part they are drawn from objective evidence available to the inquest.

Was there any failure to comply with policies, procedures or other systems of SSG that contributed to Mr Pou’s death?

The answer to this question must be yes, for reasons which I now explain.

SSG’s safe operating procedures

78. The Court heard that in the Plate Profiling section the overhead cranes were configured to operate over areas where machines were present and people were working. There were no exclusion zones to restrict access to those areas.

79. However in force at the time of this incident were formal safe operating procedures for the use of the cranes. These are set out in two key documents: SSG’s *Work Instruction Safe Operating Procedure for Overhead Cranes,* and SSG’s *Do’s and Don’ts of Steel Handling*.

80. The *Safe Operating Procedure* document directs operators to comply with the following requirements:

- To ensure before a load is moved that all workers are aware of the load movement and are well clear of the travel path.

- To ensure that all loads to be lifted are clear of any obstructions including machinery, building fixtures and products.

- To ensure that operators follow loads under travel.

81. In addition the *Do's and Don'ts* document directs operators to '*closely follow loads under travel, keeping in sight at all times'.*

82. The Court heard further that the above documents were provided to workers when they were inducted, that they were reviewed on a regular basis, and that they were referenced in Toolbox and Safety Committee meetings. It was also my impression from answers provided by Mr Lam, Mr Vo and Mr Cyrta in their interviews with Inspector Allen, and also in their oral evidence at inquest, that they were familiar with the above procedures and understood what was required.

83. Having regard to the findings made at paragraph 76 above, it is apparent Crane 26 was being operated in a way which did not comply with applicable safety procedures, specifically the following ones:

    - That its magnetic lifter be travelled at a height which kept it clear of obstructions.

    - That its operator keep the travelling magnetic lifter in sight at all times.

    - That workers be kept clear of its travel path.

84. Non-compliance with these safety procedures directly contributed to Mr Pou's death.

What caused Mr Cyrta to operate the crane in this manner?

85. On 4 November 2013 a young man died in violent circumstances, as a result of the way in which Mr Cyrta operated the machinery which fatally struck him. Mr Pou's wife, family and friends have been left grieving the loss of a person whom they loved deeply. Mr Pou's workmates were greatly distressed by the incident, Mr Vo to such an extent that he has developed a serious mental disorder. The ongoing suffering of these people was palpable throughout the inquest.

86. The question remains: how did Mr Cyrta, an experienced and adequately trained crane operator with no track record of safety breaches, come to be operating Crane 26 in such a manner?

87. In its Report for the Coroner, Safework NSW cited Mr Cyrta's explanation that he suddenly experienced a hand cramp, concluding that he had '*inadvertently operated the left joystick'* in such a way that the magnetic lifter struck Mr Pou.

88. This also appears to be the conclusion reached by all SSG personnel who provided evidence to the inquest, with the possible exception of Mr Vo. That is, that Mr Cyrta could not operate the crane in a safe manner because he was incapacitated by a cramp in his left hand.

89. This too was the substance of closing submissions made on behalf of Mr Cyrta. Ms Curtin urged the Court to find this was a tragic accident which was not the result of any failure on Mr Cyrta's part. She submitted the most likely explanation for the manner in which he had operated Crane 26 was that he was suddenly afflicted by severe pain and involuntarily pushed the left joystick to its full extent.

90. There is no evidence Mr Cyrta did not suffer a sudden cramp in his left fingers that morning. He offered this explanation from the outset, and has maintained it in all subsequent accounts. Further, there is no evidence that at the time when the cramp struck Mr Cyrta was intending to travel the crane any significant distance. He was engaged in moving a small piece or pieces of offcut steel from machine 2 to a nearby waste bin. This being the task he had in mind, the height at which he held the magnetic lifter was not inappropriate and did not breach any of SSG's safety procedures.

91. Accepting that Mr Cyrta was suddenly afflicted by a cramp in his left hand, perplexing questions nevertheless remain about his subsequent conduct. Having carefully considered the evidence, in my view an open question remains as to why Mr Cyrta allowed the crane to continue operating in the way that he did for such an extended period of time.

92. The objective evidence establishes that a period of at least 10 seconds elapsed from the presumed time the cramp struck, until the crane came to a stop. Over that period it travelled a significant distance dragging a heavy metal object at a height which seriously imperilled the safety of everyone in its travel path. The evidence further indicates the throughout this period Mr Cyrta was not watching the magnetic lifter and was apparently oblivious to its movements. As Mr Marino noted in SSG's Investigation Report, '*this is a very long time to be not in control of any crane'*.

93. Given the relative length of time involved and the grave risk that was present it is difficult to understand why Mr Cyrta did not act at an earlier point to stop the crane, either by removing his hand from the left joystick or pressing the emergency stop button. Mr Cyrta's evidence at inquest merely added to the perplexity. When probed about his asserted lack of memory, he replied that he had '*felt like I was paralysed'*. Yet when asked why he had not activated the emergency stop button, his answer was '*I have no reason'.*

94. It is possible the pain caused by Mr Cyrta's cramp prevented him from doing either of these things. Nevertheless as an experienced crane operator he could not have failed to appreciate the extreme danger the magnetic lifter posed, moving out of control as it was through a part of the factory where people and machines were present. Unresolved questions remain as to why, presented with such a crisis, he did not keep his attention on the moving magnet, and perhaps shout a warning to those around him.

95. At inquests coroners are mindful of the fact they are conducting an assessment of people's actions with the clarity of hindsight, and in very different conditions to those experienced by people at the centre of the incident. It is relatively easy to judge people's actions with the benefit of information which those at the centre of the crisis did not have, or were unable to appreciate due to the extreme stress they were experiencing.

96. Recognising this fact and making allowance for it, it remains unclear why Mr Cyrta does not appear to have taken any steps to mitigate the grave risk presented by the uncontrolled magnetic lifter. The lack of clarity on this matter is largely due to two factors.

97. First, Mr Cyrta's evidence at the inquest that he could not remember what happened during this critical period means the Court did not have the benefit of evidence which he alone was in a position to give: namely, what he actually did or did not do, and why.

98. A second factor is the number of conflicting accounts Mr Cyrta has provided about what he did once the cramp struck. Mr Cyrta has said variously that he continued to operate the joystick after the cramp came (in his statement of 4 November 2013); that he removed his left hand from the joystick after the cramp struck (in his interview with Mr Marino); that the cramp caused his hand to lock onto the left joystick (in his interview with Inspector Allen); that he stopped operating the crane from the moment the cramp struck (in his January 2017 statement); and that he has no memory at all of what he did (in his oral evidence at inquest).

99. Unfortunately the state of the evidence is such that I am not able to reach any conclusions about why Mr Cyrta allowed the crane to continue operating in the way it did for such an extended period. The lack of reliable evidence about Mr Cyrta's actions and state of mind at the critical time similarly precludes me from determining whether he might have been in a position to bring the movement of the magnetic lifter under control or to mitigate the grave risk that it posed.

100. Mr Pou's wife and family may find it unsatisfying and perhaps distressing not to have answers to these important questions about the circumstances of Mr Pou's death. Naturally they want to know all they can about how this tragedy came to pass. It would be understandable for them to feel frustrated that their understanding of some of these circumstances remains clouded. I sympathise with their feelings and for their sakes would have wished the situation to be otherwise.

101. Other identified issues are more easily resolved on the evidence. These are, whether Mr Cyrta was adequately training in operating the crane and magnetic lifter, and whether there are any alterations in the design of any machinery that could have prevented Mr Pou's death.

Was Mr Cyrta adequately trained in operating the crane and magnetic lifting attachment?

102. The manner in which Crane 26 was operated that morning gives rise to understandable concerns about whether Mr Cyrta was adequately trained in its operation.

103. At the time of this incident Mr Cyrta was a machine operator of 20 years' experience. He commenced employment with SSG in 2007, having already worked for some years as a machine operator for Rajah Engineering Pty Ltd, a company which SSG took over in 2007.

104. SSG provided Mr Cyrta with the following training, which was delivered by external accredited third party providers:

- Electric Overhead Travelling Crane Operational Safety Awareness Training on 29 October 2007, consisting of both theory training and practical evaluation
- Electric Overhead Travelling Crane Operational Safety Awareness refresher training in July 2010, again consisting of both theory and practical components
- Plate Magnet Lifting Systems training in October 2010.

105. On each occasion Mr Cyrta was certified competent.

106. Prior to 4 November 2013 the Milperra plant's Production Manager, its Operations Manager, and its National Safety Manager had never received any complaints whether oral or written about the way Mr Cyrta operated cranes, nor were they aware of any allegations that he had operated them unsafely.

107. Nor in his oral evidence at the inquest was there any indication Mr Cyrta lacked appropriate understanding of the procedures which were in place for the safe operation of the cranes and magnetic lifters.

108. The evidence at inquest establishes that Mr Cyrta was adequately trained in the operation of Crane 26 and its magnetic lifter.

Should Mr Cyrta have been permitted to operate cranes?

109. Whilst on the subject of Mr Cyrta's competence to operate cranes, it is convenient to address a related concern of Mr Pou's relatives: whether, given Mr Cyrta's explanation that he suffered a hand cramp which caused him to lose control of Crane 26, SSG should have entrusted him with the operation of potentially dangerous machinery.

110. The Court heard evidence that before commencing employment with SSG in 2008 Mr Cyrta underwent a pre-employment medical examination. The examining doctor noted Mr Cyrta suffered from arthritis in his right thumb and shoulder. No medical issues with Mr Cyrta's left hand were noted. There was no evidence that prior to this incident Mr Cyrta notified anyone at SSG that he suffered cramps.

111. There is thus no evidence that SSG was made aware of any predisposition on Mr Cyrta's part to experiencing hand cramps, or that they had information from which they ought to have been aware of this condition.

112. I note Mr Cyrta's evidence at inquest that prior to 4 November 2013 he had never experienced cramps in his hands, and therefore had no cause to notify SSG management of such a condition. In my view the evidence on this point is equivocal. Based on the contents of Mr Cyrta's statement to police it may be inferred he had previously suffered hand cramps. I refer to the following:

'I have a problem with cramps. I have had this problem for a few years. When I get the cramps I need to use my right hand to straighten out my left fingers.'

113. In his interview with Inspector Allen the following month Mr Cyrta qualified this by stating he had never had cramps in his hands at work. By the time of his second statement made on 23 January 2017 Mr Cyrta's position was that prior to 4 November 2013 he had never experienced cramps in his hands at all.

114. The inconsistencies in Mr Cyrta's evidence on this point lend further weight to the submission made by Counsel Assisting the Coroner that Mr Cyrta's evidence needs to be treated with caution.

Could any changes in the design of any machinery have prevented Mr Pou's death?

115. As part of SSG's accident investigation on 4 November, a technician from Konecranes Pty Ltd conducted a visual inspection and function test of Crane 26 and its magnetic lifter. No defects were found in the operation of this machinery.

116. I find that mechanical defect was not a causal or contributory factor in this incident, and that there are no changes in the design of machinery that could have prevented Mr Pou's death.

Could any changes to policies or procedures of Southern Steel Group Pty Ltd have prevented Mr Pou's death?

117. The key safety procedures that were in place for the operation of SSG's overhead cranes have been summarised above. There is no evidence of any deficiencies in these procedures which may have contributed to Mr Pou's death, or that any changes to them could have prevented it from happening. Rather, as I have found, Mr Pou's death occurred because Crane 26 was being operated in a manner which did not comply with those procedures.

118. Further, the evidence establishes that SSG took proper steps to ensure its safety procedures were known and understood by crane operators. The procedures were also reviewed when appropriate. By way of example, in late 2012 a worker received a graze to the back of his head when he was struck by a lifter attached to the crane he was operating. The incident was investigated and the *Safe Operating Procedures* document was amended to reinforce the need for operators to position themselves at either end of a moving load. This was followed up with safety alerts displayed in the workplace and discussions at the next Toolbox meeting.

Recommendations of Safework NSW

119. In its Report for the Coroner arising from this incident, Safework NSW made certain recommendations that were intended to apply industry-wide. These were as follows:

1. That businesses implement control measures such as an audible warning device to alert workers when overhead cranes are in use.
2. That businesses consider implementing an exclusion zone to prevent workers accessing areas under which overhead cranes are operating.
3. That businesses consider implementing control measures to ensure that all loads and equipment are raised to a safe height prior to travelling an overhead crane.

120. In submissions made on behalf of Safework NSW Mr Chin urged the Court to consider endorsing the above recommendations.

121. On behalf of SSG it was submitted, and I accept, that in relation to recommendation 3 SSG already has such control measures in place.

122. As regards recommendations 1 and 2 it should be noted that evidence was not presented on these matters; nor did Counsel for Safework NSW invite any SSG personnel to comment on the desirability or practicability of implementing them.

123. In these circumstances it would not be appropriate for this report to consider whether the recommendations sought by Safework NSW should be made.

124. In relation to recommendation 1 I make this observation only. Counsel for SSG submitted it is not practicable for SSG's Milperra workplace to implement such a recommendation. This is because at the Milperra site as many as eight overhead cranes may be operating simultaneously. Workers would not be able to distinguish the source of each audible device.

125. Having visited the Milperra site on a workday morning and experienced the prevailing sound conditions, in my view there is some force to the submission that for the reasons cited by SSG, workers' safety at that site is unlikely to be assisted by such a measure.

Recommendations

126. All interested parties at this inquest acknowledged that sites such as the Milperra Plate Profiling section were by their nature hazardous work environments, and that safety considerations are paramount if lives are not to be lost.

127. The known circumstances of this matter and its tragic outcome underline the importance of ensuring that key safety procedures are presented to workers in precise and unambiguous terms, and are reinforced in all key safety training materials.

128. At the close of evidence in this inquest certain opportunities for review of SSG's safety management documents were identified. There was co-operative discussion between the interested parties, which has assisted in formulating the recommendations that appear below. They are designed to invest with greater clarity those safety measures that already exist and are most relevant to the circumstances of this case.

129. I request that on a voluntary basis SSG provide its response the recommendations within four months.

Recommendation 1 – keeping loads under travel in sight at all times

Southern Steel Group Pty Ltd give consideration to including in the Southern Steel Group Work Instruction 'Safe Operating Procedure for Overhead Cranes' the requirement that the hook or load shall be constantly in view of the operator when being moved.

130. SSG's current *Safe Operating Procedure (Revision 7)* document mandates at rule 16 that crane operators follow loads under travel. The document does not explicitly require an operator to keep the load in sight at all times. Such a requirement is however contained in the current *Do's and Don'ts (Revision 6)* document, which at rule 11 mandates that operators '*closely follow loads under travel, keeping in sight at all times'*.

131. The importance of this safety measure is underlined by the prominence it is given in the *Australian Standard for Safe Use of Cranes, Hoists and Winches* (AS 2550.1 – 2011). This industry guidance material contains no less than three references to the necessity of keeping a load constantly in view when using remotely operated cranes: refer Standards 6.1.3(f); Standard 6.10(f); and the final paragraph of Standard 6.10.

132. The evidence at the inquest was that SSG's *Safe Operating Procedures* document plays a significant role in both its induction and ongoing training regime, and is a key component of its safety management system. It needs to reflect this fundamental safety requirement.

Recommendation 2 – stopping the crane if incapacitated

Southern Steel Group Pty Ltd give consideration to including in the Southern Steel Group Work Instruction 'Safe Operating Procedure for Overhead Cranes' and 'Do's and Don'ts of Steel Handling' the requirement that if an operator becomes incapacitated through injury or illness whilst operating a crane and unable to continue crane-operating duties, the crane must be stopped and the matter reported to a supervisor.

133. After the incident that took Mr Pou's life, SSG management reviewed safety procedures and amended its '*Safe Operating Procedures'* and '*Do's and Don'ts'* documents. Both now provide that workers are not to operate a crane or machinery if they are medically unfit. Further, supervisors are to be notified immediately if operators are aware they are not fit to do so.

134. These changes are appropriate and important. However they do not directly address the circumstances which may have applied in this case: those of a person operating machinery who is without notice afflicted with a condition which impairs their capacity to continue operating that machine safely.

135. It may be argued that the inclusion of such a requirement is redundant because the necessity of taking such action would be apparent. However this action was not taken on the morning of 4 November, with tragic consequences. Furthermore the *Australian Standard* referred to above contains such a requirement. I refer to Standard 6.1.3(i):

'…'*in the event of the operator becoming incapacitated through injury or illness and unable to continue crane-operating duties, the crane shall be stopped'*.

136. For these reasons it is desirable that this requirement be reinforced by including it in SSG's two key safety management documents.

Recommendation 3 – the term 'load' includes anything suspended from the crane hook.

Southern Steel Group Pty Ltd give consideration to providing in its Safe Operating Procedure' and 'Do's and Don'ts of Steel Handling' documents that the term 'load' includes any item suspended from overhead cranes, including all crane accessories and lifting equipment.

137. Both the *Safe Operating Procedure'* and *'Do's and Don'ts of Steel Handling'* documents use the term 'load' when referring to items being moved with the use of overhead cranes.

138. The facts in this matter involved the movement of an unloaded magnetic lifter: that is, one that was not carrying any items at the time. In the evidence however it was not entirely clear whether the term 'load' whenever used in the safety documents included unloaded lifters.

139. The lack of certainty emerged from the oral evidence of Operations Manager Mr Jimmy Zhu. Based on answers he provided in the earlier part of his evidence it appeared that the term 'load' when used in the *Safe Operating Procedure* document did

not always refer to the unloaded magnetic lifter. Mr Zhu later clarified that in all cases where the safety documents referred to 'load', it encompassed anything being carried by the crane including unloaded magnetic lifters. In fairness, this also appeared to be Mr Cyrta's understanding of the term.

140. It is important that any potential for uncertainty on this question be eliminated. For this reason it is desirable to make clear in SSG's two key safety documents that the term 'load' includes any item suspended from overhead cranes, including all crane accessories and lifting equipment.

Findings: s81(1) *Coroners Act*

141. As a result of considering all of the documentary evidence and the oral evidence heard at the inquest, I find that Brandoli Pou died on 4 November 2013 at Liverpool Hospital as a result of severe chest injuries he sustained when he was struck with a magnetic lifter at his workplace. The manner of his death was a workplace accident arising from Mr Cyrta's loss of control of the operation of the magnetic lifter.

Recommendations: s82 *Coroners Act*

142. Recommendations pursuant to section 82 of the Act are set out above.

The extent to which Brandoli Pou's death has impacted his wife, family and friends was truly apparent in the moving statements made at the close of evidence. The coronial team and staff at the NSW Coroner's Court hope that Ms Crawford and all of Brandoli Pou's family will accept our sincere condolences on the loss of a man who was so loved and is so much missed.

I close this inquest.

Magistrate E Ryan

Deputy State Coroner
Glebe

Date