INQUEST INTO THE DEATH OF PHILLIP JOEL HUGHES

OPENING STATEMENT OF COUNSEL ASSISTING

Introduction

1. Phillip Joel Hughes was born on 30 November 1988 and died at around 11.05 am on 27 November 2014 when he was aged just 25 years. During the afternoon of 25 November 2014 he had been hit on the left side of his neck by a delivery bowled during a Sheffield Shield Cricket Match at the Sydney Cricket Ground when Phillip was representing South Australia against New South Wales. The injuries he sustained were fatal. He died at St Vincent's Hospital in Sydney a little less than 2 days later. He is survived by his father Greg, his mother Virginia, and his siblings Megan and Jason.

2. Greg Hughes, in a statement prepared for the purpose of this inquest, writes of Phillip's dream as a young country kid to play cricket for his country and his uncomplaining dedication to achieving this ambition. He describes his son's resilience and his moral strength as well as his passion for the game of cricket. He also speaks of how this particular game was important for Phillip, and speaks of his family's excitement for Phillip at this time. Whilst Greg was not at the ground, Phillip's mother and sister were, and they were keeping him regularly updated. When he received news of the seriousness of the injury, he travelled from his home in Macksville, New South Wales down to Sydney immediately.

3. Phillip's sister Megan describes Phillip as an amazing individual who was looked up to by many. She speaks of his talent and hard work. She says that she could tell that Phillip was both anxious and excited about playing that day. She also describes him as being "on fire" and in his element whilst batting. Jason also describes how no one worked harder that Phillip and how positive and uncomplaining Phillip was, and how Phillip was working hard to make his way back into the Australian team. Jason was at work that day but was planning to go to the SCG to watch the last session of the day.

4. He was contacted by a number of mates who were aware of what had happened. In this regard, your Honour should be aware that the play was being live-streamed from the SCG at the time. It appears that it could then be uploaded to video sharing sites.

5. As provided by s. 81 of the *Coroners Act 2009* (NSW), it is your Honour's role to make findings at the conclusion of the inquest as to:

    a. the identity of the deceased;

    b. the date and place of death;

    c. the manner and cause of death.

6. Your Honour also has jurisdiction under s. 82 of the *Coroners Act 2009* (NSW) to make such recommendations as your Honour may consider necessary or desirable to make in relation to any matter connected with the death, including in relation to public health and safety and that a matter be investigated or reviewed by a specified person or body.

7. The identity of the deceased, and the place and time of his death are clear. The focus of this issue will therefore be upon manner and cause of death, and upon what if any recommendations should be made under s 82.

8. An issues list identifying the anticipated focus of the inquest, having regard both to manner and cause of death, and potential recommendations, has been

produced and circulated. The issues for Your Honour, as identified in the issues list, are as follows:

1. The cause of Phillip Hughes' death.

2. The manner of Phillip Hughes' death, including:

(i) the nature of the play in the afternoon of 25 November 2014 at the Sydney Cricket Ground and whether that in any way exacerbated the risk of injury to Phillip Hughes;

(ii) the appropriateness of the emergency planning and response to Phillip Hughes' injury, including the calling of ambulances, time of response to ambulance, conveying of information to ambulance service for the purpose of 000 calls, and emergency response training and management as relevant to injury to players; and

(iii) whether or not any protective helmet would have prevented or minimized the risk of Phillip Hughes' sustaining the fatal injury he sustained.

3. Any recommendations considered necessary or desirable to make in relation to any matter connected with the death of Phillip Hughes including as to:

(i) Protective helmets; and

(ii) Emergency planning and response, and training in relation thereto.

9. As your Honour knows, an inquest is not a forum for determining any civil liability, or for apportioning blame. It is an opportunity to expose the facts of the matter, with a focus on considering any steps that might be taken to prevent similar deaths occurring, or to protect cricketers from such risks, in the future. It is in that spirit that the evidence will be presented, and the issues arising addressed. It is hoped that this further investigation into the circumstances surrounding Phillip Hughes' tragic death can assist in enabling

greater understanding of what happened that day and, if reasonably practicable, preventing any recurrence and also ensure that any areas for improvement either in relation to protection of cricketers or in relation to crisis response are promptly identified and if necessary acted upon.

10. If I could now turn to an outline of the evidence in the brief prepared for the purpose of this inquest.

The incident

11. The Sheffield Shield game between NSW and South Australia began at around 10.30 am on 25 November 2014, South Australia having won the toss and elected to bat. Phillip Hughes, along with Mark Cosgrove, opened the batting for South Australia. He batted throughout the morning session and resumed after lunch at around 1.00 pm. Phillip Hughes reached 50 midway through the 33rd over from 114 balls. The incident occurred at around 2.23 pm on the 3rd ball of the 48th over. Phillip Hughes had scored 63 runs from 161 deliveries and South Australia were 2 wickets for 136. The ball was bowled by a NSW pace bowler, Sean Abbott. Phillip Hughes tried to hook the ball to the leg-side but missed the delivery and it struck him on the left side of his neck. Immediately following the blow he stepped to the side of the pitch and bent over, head down, and then placed both hands on his knees. Other players approached him, and after only a matter of a couple of seconds he fell to the ground making no attempt to break his fall. The bowler Sean Abbott, the wicket keeper Brad Haddin and others immediately ran towards Phillip to render assistance.

12. It appears that the clip on his helmet was broken in the fall, as it was found to be broken and could not be fastened in its broken state. This makes it unlikely that the damage to the helmet was pre-existing.

13. Phillip Hughes was immediately attended to by players, and then by the team doctor Dr John Orchard. He was subsequently assisted by Dr Tim Stanley, a medical practitioner with specialist experience in emergency and intensive care medicine who had attended the game that day as a spectator. Emergency services were called and Phillip Hughes was taken by ambulance to St

Vincent's Hospital in Darlinghurst. He underwent emergency neurosurgery but never recovered consciousness.

14. For the purpose of this inquest enquiries were made of various media organisations, in relation to arrangements put in place to respect the privacy of a seriously injured player or participant in sporting events which are broadcast, including those that, as was the case here, have a live feed. A number of organisations responded indicating that, with this incident, special care was exercised to ensure that the coverage of this tragic incident was measured, sensitive and compliant with the relevant regulatory requirements involved, including those aimed at not including material in a broadcast of news or current affairs where that material is likely to cause serious distress. Your Honour, it is not proposed to look further at the extent of that media coverage during this inquest.

Cause of Death

15. A post-mortem was conducted by Professor Duflou on 28 November 2014 and in his opinion the cause of death was a traumatic basal subarachnoid haemorrhage, due to a vertebral artery injury. An area of bruising was identified in the region of the left ear, a 17 mm superficial laceration was found on the left side of the chin and a 13mm scratch was observed on the thyroid prominence, or Adam's Apple. The bruising was identified as likely due to the impact of the cricket ball. The laceration was thought to be sustained when Phillip Hughes collapsed to the ground after having been hit. He also had a fracture in the left lateral mass of the C1 vertebra. Professor Duflou said in his report that "*Death due to subarachnoid haemorrhage brought on by vertebral artery laceration is a not uncommon finding in coronial autopsy practice*". Whilst he identified that the injury most commonly occurs in the setting of interpersonal violence, he also referred to "*isolated reports of these injuries being sustained as a result of a hard ball or similar object striking the head or neck during sport*".

16. Professor Duflou identifies that dissection of the vertebral artery has been described in both contact and non-contact sports. He references a scientific article by Paul McCrory in 2000 which presented five cases of vertebral artery dissection in sport. This included 2 cases of fatal vertebral artery dissection in Australian Rules football, 1 case in rugby league, and 2 cases of non-fatal vertebral artery dissection following increased hours spent playing tennis, both of which resulted in full recovery. The article reports (as at 2000) 24 cases of stroke due to vertebral artery dissection in sporting patients, and describes vertebral artery dissection as a rare and incompletely understood condition, the precise incidence of which is unknown. In an article from 2012 also referenced by Professor Duflou, by de Souza and others, it is identified that blunt traumatic vertebral injury was being increasingly detected due to improvements in imaging of trauma patients. This raises a possibility that this form of injury may have occurred more frequently than is recorded in the literature, but had not been identified at the time.

17. Your Honour will hear evidence from Professor Duflou during the course of this inquest.

18. An expert report as to cause of death has been obtained by Professor Brian Owler, expert neurosurgeon, from whom your Honour will also hear during the course of the inquest. In his opinion, Phillip Hughes suffered a traumatic dissection of the dominant left vertebral artery, which supplies arterial blood to the brainstem, which in turn connects the majority of the brain to the spinal cord and contains centres that control important basic functions such as respiration and consciousness. He describes this as an injury which carries "*a very poor prognosis*".

19. Dissection of the dominant vertebral artery will lead to an absence of arterial blood supply to the brainstem which will cause sudden loss of consciousness and respiratory arrest. Whilst respiratory support may prevent immediate cardiopulmonary arrest and death, it will not reverse the ischaemia to the brainstem and the resulting fatal neurological injury. In Professor Owler's

view, once arterial blood supply to the brainstem was compromised almost immediately after the blow to the head was sustained, there was no intervention, no matter how early, that could have been performed to avoid Phillip Hughes' death. He also described the medical care Phillip Hughes received as both timely and appropriate at all stages subsequent to his injury.

20. As to the mechanism of Phillip Hughes' injury, Professor Owler explains that it was the violent movement of the skull relative to the cervical spine that is the most likely mechanism by which this injury was sustained. This is because the vertebral artery is relatively fixed in the lateral mass of the cervical vertebrae, such that movement of the head can apply a sudden and violent force to the artery leading to vertebral artery dissection. In the case of Phillip Hughes, the likelihood of his injury was contributed to by a number of factors. First, the magnitude of the force applied to his head would have increased the magnitude of force applied to the artery. Second, the way in which the force was applied to create movement of the head relative to the neck. Third, the posture of Phillip Hughes at the time when the ball struck his head, in that the effect of the ball striking him was that his head was lifted, laterally flexed and rotated. In this way the speed of the delivery, the location of the blow, and Phillip Hughes' posture at the time of impact, were all significant contributors to his ultimate injury and death.

21. Professor Duflou has also considered Professor Owler's report and largely agrees with his analysis. However, he does not necessarily agree that the magnitude of force is a significant factor. Rather, he says that there does not appear to be a close relationship between the magnitude of force applied to the side of the head and the likelihood of production of a subarachnoid haemorrhage consequent upon vertebral artery dissection. His view is that the mechanism of injury is largely the rapid movement of the head relative to the neck and not the direct effect of a blow to that part of the body. He also describes how in 30 years as a forensic pathologist he has not conducted

another autopsy on a cricketer who has sustained a fatal blow to the head from a cricket ball.

The play on 25 November 2014 in the period leading up to the injury

22. There are real difficulties in precisely measuring and assessing aspects of the evidence in relation to the play leading up to the incident. Whilst there is video footage, it is not side on and that makes estimates of the trajectory of the ball that hit Phillip, and earlier deliveries, difficult. The players and umpires involved did not give direct accounts until, for the most part, around 18 months after the incident when their memories would inevitably have faded. Phillip's family have expressed concerns about some matters, and their concerns are largely based upon their viewing of the video footage and some comments they understood to have been made in the aftermath of the incident, including from some of the cricketers involved.

23. An umpiring expert, Simon Taufel, has been asked to review that footage to assess the nature of the play and umpiring on the day. His opinion is very helpful given the limitations of the material available to him, albeit that he indicates that he has experience in seeking to reconstruct these matters. Whilst your Honour will see in the brief of evidence estimates that the ball that hit Phillip was travelling at 140 km/h, that is necessarily an estimate of the speed at which it left the bowler's hand, and not its speed off the pitch after bouncing, and the source of that estimate is somewhat obscure. However your Honour may consider over the course of the next few days that in reality there is little controversy, and that the differences are more differences of perception than anything else, revealing more than anything a concern as to the risks associated with the game of cricket, particularly when played in a highly competitive way.

24. Concerns have been raised in relation to the number of short balls that were delivered by the pace bowlers to Phillip Hughes on 25 November 2014, and tactics during the afternoon session that day. In particular, concern has been expressed that the NSW team may have been bowling short at Phillip Hughes

for "*a good majority of the time*" after lunch in an attempt to restrict the run rate and get him out, and as to whether the umpires should have taken steps to prevent this. There has also been some concern expressed as to any sledging that may have taken place that day. Jason Hughes has, with the benefit of the video footage available, prepared a ball by ball analysis of apparent short pitched deliveries that will assist your Honour in understanding this first issue.

25. It has been, to some extent, difficult to investigate whether or not these concerns are well-founded given the lack of any side-on footage of the play that day. However, a range of material has been amassed to seek to inform your Honour as to the issue of whether or not the play that day involved any bowling that should have been prevented by the umpires, whether the bowling was dangerous, and what if any words were exchanged between the two teams during the course of play. Evidence has also been sought to seek to ascertain what, if any, impact any such matters may have had on Phillip that afternoon and whether or not this could in any way have contributed to the injury.

26. In inquiring into this, however, your Honour may wish to bear in mind that cricket, of its very nature, involves a batsman facing a hard ball weighing 156 grams being hurtled towards him or her at very high speeds, often in the region of his body and sometimes towards his head. That is an inherent risk of the sport, and it is one which Phillip Hughes knowingly and willingly faced as an incident of his commitment to playing first class, including test, cricket.

27. The Sheffield Shield rules as at November 2014 included Law 42 – headed "Fair and Unfair Play". This applied Law 42 of the Marylebone Cricket Club Laws of Cricket, with some modification. Sheffield Shield Law 42.6, "Dangerous and Unfair Bowling", provided that "*a bowler shall be limited to two fast short pitched deliveries per over*" and defined a fast short pitched delivery as "*a ball, which after pitching, passes or would have passed above the shoulder height of the striker standing upright at the crease*". The umpire

at the bowler's end is required to notify the bowler when each fast short pitched delivery has been bowled. Provision is made for steps to be taken in the event that further fast short pitched balls are bowled, or if the maximum of two is exceeded by one bowler in more than one over, which can, after a final warning, lead to the bowler being taken off. A separate sub-law deals with the bowling of high full-pitched balls.

28. There is also Law 42.3.1 which provides for a no ball and a caution in the event that there is *unfair bowling*, defined as "*if in the opinion of the umpire at the bowler's end he considers that by their repetition and taking into account their length, height and direction, they are likely to inflict physical injury on the striker, irrespective of the protective clothing and equipment he may be wearing. The relative skill of the striker shall also be taken into consideration*".

29. Having regard to these laws your Honour may well consider during the course of this inquest that it is inherent in these rules that, from time to time, a batsman will face balls which are fast and short, and that part of the skill-set of an accomplished batsman playing first class cricket will inevitably be to develop strategies for safely dealing with such deliveries. Moreover, that the laws include a very specific provision for action to be taken by an umpire who forms an opinion that there is a likelihood of physical injury being inflicted upon a batsman, recognizing that first class batsmen are likely, albeit to varying degrees, to have the skills to face fast short pitched balls without any real likelihood of injury. The laws also recognize that one of the factors which can bear upon the risk of injury is the repetition of such balls.

30. The first source of information in relation to the play that afternoon is the video footage. I would ask that the video footage be played now – from 4.05 – 4.11

31. The second source of information is accounts of the players involved in the match. Statements have been obtained, and will form part of the brief, from

NSW players Doug Bollinger, the NSW captain that day Brad Haddin, David Warner, Sean Abbott and the South Australian batsman who was batting with Phillip Hughes at the time of the incident, Tom Cooper. There are some important common elements from this evidence:

a. As would be expected, the NSW team were trying to get Phillip Hughes out that afternoon;

b. The players, to the extent that they can remember, do not believe that there was any targeting of Phillip by short balls that day;

c. There were no warnings from the umpires in relation to the number of fast short-pitched deliveries bowled;

d. Whilst it is possible that there was some but there is no recollection of any specific comment or backchat directed to Phillip and no recollection of any complaints about comment or backchat;

e. Phillip was batting really well that day and seemed comfortable at the crease, as did Tom Cooper with whom he was batting;

f. Phillip was using his physical and technical ability to keep the ball down or score runs;

g. There was a good atmosphere on the ground that day.

32. According to Brad Haddin, the NSW captain and wicket keeper that day, at lunch there was a discussion about the plan for the afternoon which was "*to try and get Phil to nick the ball by moving his feet*". He describes this as more of a field placement change than a bowling change. David Warner describes the team plan as being to bowl at or over leg stump to get Phillip moving backwards rather than forwards with a view to him pulling or hooking so that they could get a nick and take a catch. Tom Cooper recalls that there was more short pitched bowling after lunch to limit runs, and that this was more aimed at Phillip because "*he was the one that was making it look easy*".

33. David Warner also describes how, having played with Phillip including in test matches, Phillip was never anxious or unsettled by short deliveries but would tackle it to score runs or get out of the way.

34. Your Honour will also have, in the brief, statements from Ash Barrow and Mike Graham-Smith, the umpires on the day. Neither can recall any on-field talk between the opposing cricketers that concerned them nor any concerns being raised by the batsmen.

35. As I have mentioned, a report has also been obtained from Mr Simon Taufel, a highly experienced cricket umpire and trainer. He has been a cricket umpire since 1991 and has officiated 700 matches at various levels in over 14 countries. He now has a role with Cricket Australia, although at the time he was engaged he was a training manager for the International Cricket Council. He has assessed the bowling from the entire day and concluded that over the day there were 23 bouncers bowled. He considered that there was no case of repetition of bouncers for the umpires to act upon. He also says that on his analysis Phillip Hughes was mostly playing the short deliveries with relative ease, either ducking underneath them or scoring runs. Before lunch Phillip's strike rate was 34 runs per 100 balls faced, but after lunch it was 43 runs per 100 balls faced. Thus, his personal strike rate was increasing. As regards the umpiring on the day, in his view the umpires had a good firm control of the match proceedings.

Timing and management of the response to the injury

36. As set out above, the incident occurred at about 23 minutes past 2 pm. There is no recording of the precise time at which Phillip Hughes was struck, but using the video footage which at some points has an image of the clock tower on the Members' Stand at the ground, and then using the internal timings on the video recording itself, this is the best approximation we have been able to reach.

37. At the time, the team doctor for the NSW team was Dr John Orchard. He says that at this time he had never before had to use any of the available emergency

equipment during a cricket match. He observed the incident on the live video feed when he was in the SCG medical room, and he ran immediately onto the field. To get from the medical room to the field is 50 metres up and down stairs and through a long room and crowd, and in order to ensure that he could run without obstruction and as quickly as possible Dr Orchard did not take his medical bag with him. On the video footage it appears that he, together with the South Australian physiotherapist Jon Porter, reached Phillip within about 40 seconds of the incident occurring. Jon Porter had a small medical bag with him. Phillip was deeply unconscious and not responding, but he was breathing and had a strong and fast radial pulse. Dr Orchard called for the Medicab and an ambulance. Murray Ryan, the NSW team physiotherapist, had already found the room attendant Doug Williams to ask him to arrange for the Medicab and this was done. Mr Ryan then went to obtain a scoop stretcher. He could not find it in the medical room and therefore they ran to the NSW physiotherapy room which was in a building about 500 metres away from the SCG. They got the stretcher and ran to the field, by which time Phillip had already been loaded onto the Medicab. From the CCTV footage it is estimated that this was about 4 minutes after the incident.

38. Jon Porter says that during this time Phillip's breathing deteriorated. The Medicab arrived within about 3 minutes of the incident and Phillip was placed onto a spinal board. Phillip was loaded onto the Medicab and the Medicab drove to the sidelines at approximately 5 minutes after the incident. Dr Orchard asked Mr Ryan to retrieve an oxygen tank so he ran to the medical room to find this and a defibrillator. It may be that oxygen had also been sourced by that time by staff at the SCG.

39. Dr Orchard started mouth to mouth resuscitation at the sidelines and says that although he had been becoming cyanotic his colour soon returned. At around this time, Dr Stanley, an intensive care specialist who was in the crowd came and offered assistance. Dr Stanley says that from the way Phillip fell it appeared that he had been seriously injured. Thereafter, a request was made at Dr Stanley's suggestion that the medical bag be brought urgently to the scene.

Murray Ryan could not locate the bag in the medical room so ran again to the NSW physiotherapy room, 500 metres from the SCG, and retrieved 2 orange medical bags, an oxygen bottle and a defibrillator. These were taken to Dr Orchard who together with Dr Stanley was able to provide effective bag and mask ventilation and oxygen. Dr Stanley identified that Phillip's pupils were dilated and not responsive to light which indicated a severe injury. He sought to hyperventilate Phillip as this may be a means of lowering intracranial pressure.

40. The first 000 call made was made by Scott Henderson, who will give evidence during this inquest. Mr Henderson at that time was the events and operations co-ordinator at the Sydney Cricket and Sports Ground Trust. According to the NSW Ambulance incident report the call was picked up at 14.29:55, was placed in the pending queue at 14:32 and was completed approximately 4 minutes later at 14.33. The logged message was that the ambulance was responding to a patient with specifically identified "*traumatic injuries. The patient is a 25-year-old male, whose consciousness and breathing is unknown, POSSIBLY DANGEROUS body area, traumatic injuries*". The caller's statement was recorded as being "*hit in head with cricket ball. 1. This happened now (less than 6hrs ago). 2. It's not known if there is SERIOUS bleeding. 2. It's not known if he is completely alert (responding appropriately). 4. The injury is to the head. PT LOCATED ON SIDELINE OF FIELD OF PLAY – CREW WILL BE DIRECTED FROM GATE ONE. PT STRUCK IN HEAD WITH BALL DURING SHEFFIELD SHIELD MATCH*".

41. The transcript of this 000 call shows that when asked, Mr Henderson did not know whether or not Phillip was breathing, whether there was any serious bleeding, or whether he was completely alert. Mr Henderson said that the incident had happened 5 minutes earlier, and that "*they just called for an*

ambulance". When asked where the patient was located, Mr Henderson said that he was on the sideline of the field. That may give your Honour some indication of timing. He said that the ambulance should come to gate 1 of the SCG on Moore Park Road but that they could also come in on Driver Avenue. The 000 operator told Mr Henderson to call back "*if he gets worse in any way … or if you get any further information*".

42. In his statement, Mr Henderson explains that he was at his desk within the administration building next to the Allianz Stadium at the time of the incident and that at about 2.25 he was notified by a casual customer service staff member via radio that there had been an incident and that there was a player who required medical attention. He then left his desk and walked to the lift to go down to the ground. He was then called by Mr West (from whom your Honour will also hear) who said that an ambulance was needed urgently. Mr Henderson called 000 straight away and spoke with the operator as he was walking to the ground. As he candidly says, he "*wasn't aware of a lot of the specific details about the injury and what had happened*". He explains that he was still on the 000 call when he had his first visual sight of the incident and it confirmed how serious the injury actually was, and that he asked the medical team if they needed him to pass on any information to the ambulance and they just said to try to get the ambulance to the ground as quickly as possible.

43. Whilst Mr Henderson says that he was radio-ed by Mr Tinyow, Mr Tinyow (who has since passed away) in his statement says that he quickly realized that the matter was serious and that he then called "*event comms*" and told them that an ambulance was needed, and that security acknowledged his call and noted that Mr Henderson would be informed.

44. As a result of this call the NSW Ambulance allocated the call as a 1C call – which is a response of the third highest level for which the response guideline is "*the most timely ambulance resource*" and a response time is required by

NSW Ambulance to be within 12.9 minutes of the call being placed in the pending queue (which with this call was 2 minutes and 20 seconds after the call was picked up). By way of contrast, a call allocated at level 1A has a response guideline of "*closest and most timely approved ambulance resource and highest clinical skill available*" and a response time of 10 minutes.

45. Thereafter ambulance no. 1958 was assigned at 14.35 and was *en route* at 14.36. This ambulance was being driven by intensive care paramedic Jacobs who was driving alone that day as the person with whom she was rostered to work was sick. She was based at the Summer Hill Ambulance Station, and at the time that she was contacted about this dispatch she had left an incident at Croydon Park shortly before she was contacted about this incident. She arrived at the SCG at 1502. According to Mr Vernon, Director of the Control Division, NSW Ambulance, at that time there was no ambulance in the Sydney East dispatch area to respond to this call and that is why Ambulance no. 1958 from the Sydney South area was dispatched to respond. He says that this ambulance had only become available at 14.35 and describes it as a single responder.

46. A second 000 call, from Donna Anderson the Team Operations Manager at Cricket NSW, was logged by NSW Ambulance as being picked up at 14.36:05. It is then logged as having entered the queue at 14.37.07, as the first unit having been assigned at 14.38, as the unit having arrived at 14.44 and as the call taking having been completed at 14.47. The response vehicle was vehicle no. 1443. The incident report records the relevant information from the call as being "*You are responding to a patient who is unconscious (or has fainted). The patient is a 25year old male, who is unconscious and whose breathing is ineffective. INEFFECTIVE BREATHING. Unconscious/fainting … HIT IN HEAD WITH BALL. CPR HAS BEEN IN PROGRESS. DR ON SCENE*". It was this ambulance which ultimate took Phillip to St Vincent's Hospital.

47. Ms Anderson explains that she saw the incident on CCTV as she was heading back to her office and immediately headed back to the members stand. She went to find Virginia and Megan Hughes, moved them to somewhere private, and got them a drink. She saw some players run into the medical room and gather some medical equipment. She said that the players were coming and going a few times and on one such occasion one of the players yelled at her to "*ring back the ambulance and see where they* are". She then called 000 from her mobile phone, and at the time she was standing about 50 metres away from where Phillip was being treated and Dr Orchard was there. She immediately told the ambulance operator that Phillip was unconscious and that the team doctor was there, that Phillip was not awake, was barely breathing and that the medical attendants had been doing resuscitation. This information triggered a request from the ambulance operator for more information. The ambulance operator asked her to put the doctor on so she gave the phone to Dr Orchard. She stayed on the call until the first ambulance arrived. She was asked which gate the ambulance should come through and she immediately can be heard asking someone else "*what gate do we want them to come through?*" then indicating "*gate 1*". Later in the call there is reference to gate 9.

48. This second 000 call was allocated category 1A, and is the only category where more than one ambulance can be dispatched as an initial response. According to Mr Vernon, ambulance no. 1443 which responded to this call became available at the Prince of Wales Hospital at 14.37 and was immediately dispatched to the SCG. Paramedic officer, Greg Bradbury, explains that he had just completed a transport of a patient at the Prince of Wales Hospital a "*few minutes beforehand*" and was dispatched to this assignment together with Julie Terry, who was driving. Ms Terry says that they were driving up High Street in Randwick heading east when they received the dispatch call, having just left the Prince of Wales hospital.

49. Mr Bradbury, who was the treating paramedic, explains that he arrived at Driver Avenue and was flagged down by an official who directed them to go

back to gate 9 and down the tunnel onto the field. When they arrived Phillip was on the boundary line at the far side of the field. Dr Orchard was holding his wrist and checking for a radial pulse and Dr Stanley was doing intermittent positive-pressure ventilation with an oropharyngeal mouth. Defibrillation was performed at 14.46. Mr Bradbury inserted a laryngeal mask airway at 14.49. He was not qualified to perform intubation and did not have a CO detector in his ambulance vehicle. He then inserted a cannula for IV access at 14.55.

50. At around 1440 hours the Sydney Helicopter Emergency Medical Service, which is part of the NSW Ambulance, received a tasking from the Rapid Launch Trauma Coordinator in the Aeromedical Control Centre. The crew, comprising duty pilot, a duty air crewman, an intensive care paramedic Aaron Davidson and a doctor Michael Culshaw, were based at Bankstown Airport and were asked to attend an unconscious patient who was struck in the head by a cricket ball in the Moore Park area. They departed Bankstown Airport at 1446 hours. Once in the air they were informed that the patient was at the Sydney Cricket Ground.

51. A third 000 call, the second from Scott Henderson, was made after the ambulance had already arrived, requesting a special ambulance. This was, however, already on its way.

52. The Sydney Helicopter Emergency Medical Service arrived at the ground at around 1500 hours. Phillip Hughes was still there, being hand-ventilated using a laryngeal mask by Paramedic Jacobs. Dr Culshaw examined Phillip at around 1502 and found that he had a Glasgow Coma Score of 3 with fixed markedly dilated pupils and no spontaneous movements. Dr Culshaw says that he thought it most likely that Phillip had had a significant traumatic intracranial haemorrhage but he thought it unusual that there were no obvious external signs.

53. They identified that he required urgent transport to hospital for neurosurgical evaluation. Dr Culshaw and Mr Davidson, together with intensive care paramedic Jacobs, travelled with Phillip Hughes in an ambulance vehicle to St Vincent's Hospital. They decided that it was best for the transfer to commence

whilst they commenced preparation for urgent endotracheal intubation. The ambulance (driven by Ms Terry) was then stopped in the tunnel at the stadium to facilitate a rapid sequent intubation, and the time taken to perform it was about 2 minutes from induction to placement of the endotracheal tube.

54. According to the ambulance retrieval record, Phillip Hughes was loaded in the ambulance at 1504, the ambulance departed the scene at either 1507 or 1509, left the SCG at 1517 and arrived at St Vincent's Hospital ambulance bay at approximately 1521 hours, approximately 1 hour after the incident. Phillip was then transferred to the care of the trauma team at the hospital.

55. Dr Pell, neurosurgeon at St Vincent's Hospital, says that Phillip Hughes arrived at the Emergency Department at 1523, unconscious with both pupils fixed and dilated and a Glasgow coma score of 3. He was immediately taken for a CT scan which showed a massive subarachnoid haemorrhage and no flow in the left vertebral artery. There was also a small undisplaced fracture at the lateral mass of C1. He was assessed and transferred straight to theatre.

56. Mr Vernon describes the procedure whereby NSW Ambulance prioritises 000 calls using a computerized system known as ProQA, an extension of the Medical Priority Dispatch System. These systems are used by NSW Ambulance Control Centre staff to triage and prioritise emergency calls. He explains that the process is for information being obtained for the purpose of prioritization, a dispatch code being allocated, and then for the call to be placed in the pending queue for dispatch. A dispatcher then determines the appropriate type and level of resource required.

57. Your Honour I anticipate that at the end of the evidence taken in this inquest, there may well be no question but that none of the chronology set out above had any impact upon the death of Phillip Hughes, which appears to have been inevitable from the point of impact. However, during the course of this inquest your Honour may consider that there are lessons which could be learned from this incident, in terms of training, crisis planning and incident management. In particular, your Honour may feel that the following could be considered:

a. Further training of players and/or umpires, and other match officials in relation to first aid, management of head injuries and training of such persons together with staff at the SCG as to the information that is essential in relation to emergency responses, in particular:

   i. the precise location of any blow or contact,

   ii. the state of consciousness.

   iii. whether or not the patient is breathing,

   iv. any site of bleeding, and the extent of bleeding,

   v. whether or not the patient is alert.

   Those matters were clearly important in assessing the priority of the response from the ambulance service, and at the conclusion of this inquest your Honour may wish to consider whether prompt and accurate information in relation to those matters would be of great assistance in seeking to ensure that appropriate and timely responses are made. In this regard your Honour may find it of assistance to note that there are some policy documents (although apparently not in relation to this match) which provide for pre-determined and standardized symbols to communicate what form of assistance is required where there is an injury during a cricket game. Moreover, Ambulance NSW have now prepared a “000” Medical Emergency Call Information Poster for sporting events and venues which will can be downloaded from their website. Your Honour may well feel that this will be a highly valuable document for such training and education purposes.

b. Training of players and umpires, and other match officials, in relation to the precise location of medical equipment, and at a basic level what medical equipment (for example stretchers) may be appropriate in different situations, including a requirement that the medical equipment be located in designated places. This was a requirement for international matches at the SCG at the time, and oxygen and Automated External Defibrillator was to be located on the Medicab.

c. Training of all event management staff at the SCG as to the same matters – although your Honour may feel that this is unnecessary given that the Trust policies and procedures appear to allocate responsibility for medical treatment of players and match officials to the venue hirer and allocate responsibility for contacting emergency services to the venue hirer's medical representative.

d. Training of players and umpires as to fixed signals to indicate to those at the stand what form of assistance is required. By way of example, as was the case for the international season at the time, there was a fixed hand signal, standard across all international cricket matches, to indicate a need for a stretcher, another to indicate a need for oxygen and for an ambulance to be called immediately. Moreover, indicating that potentially umpires could have a valuable role in communicating information about emergencies, Cricket Australia's evidence is that umpires would be able to use their two-way radios to contact the Match Referee in the event of a serious incident.

e. Allocation of responsibility for contacting and updating emergency services with all relevant information. There may be difficulties in that responsibility resting solely upon the team doctor in circumstances in which, as here, that person may be engaged in providing life-sustaining treatment. Again, your Honour may find it of assistance to note that there are policies (although it is not clear whether there was any such policy which applied to this game) requiring that only designated persons shall contact emergency services. For example, for the international season 2014-2015 there was a matrix designating responsibility for requesting and coordinating requests for an ambulance, to be through the event operations centre and there was also a designated staff member to manage access by the ambulance.

f. a predetermined arrangement at all venues for the appropriate means of emergency services vehicles, including ambulances and air ambulances, obtaining access to the site. By way of illustration, there is in the brief a medical plan for the international cricket season which designates a fixed ambulance arrival point for incidents involving players or officials.

58. In this regard, your Honour may find a document exhibited to Simon Taufel's report instructive. This identifies the content of Umpires First Aid Awareness Training adopted in England, including as to the role of the medical team, responding to an injury, management of an unconscious casualty, managing cardiac arrest and concussion.

59. Your Honour may also feel that some liaison between NSW Ambulance and Cricket Australia could be of benefit in identifying those factors which are critical in the context of ensuring that the emergency response team is given all relevant information, and appropriately updated, to facilitate prompt and appropriate assistance being provided.

Emergency and Medical Plans

60. Two entities were relevantly involved in the organisation of the match and its administration on the day, Cricket NSW and the Sydney Cricket and Sports Ground Trust. Cricket NSW hired the venue from the Trust, pursuant to a Venue Hire Agreement. As at the date of this incident, a number of procedures were in place concerning emergency responses. Those procedures are taken from various documents supplied by Cricket Australia and the Sydney Cricket and Sports Ground Trust to this inquest.

61. Clause 10.2 of the venue hire agreement covering the Sheffield Shield game on 25 November 2014 included provision that the Trust was responsible for organizing and providing, or procuring the organization and provision, at its own cost, of adequate medical care and treatment for players, officials, spectators and all third parties. The Trust was also to provide appropriate facilities including adequate medical and first aid facilities for medical practitioners and other health professionals and medical personnel and facilities of an appropriate standard.

62. As at the date of this incident there was a Cricket Australia medical matrix which applied to Sheffield Shield games. This identified what medical equipment and personnel should be available at Sheffield Shield cricket games. There was also a Cricket Australia Critical Incident Management Plan

which defined a critical incident to include any situation that results in one or more fatalities to Cricket Australia staff, teams and/or event attendees so may have applied to the incident involving Phillip Hughes. This provides that there should be an emergency response team and an on-scene commander who will usually be the most senior Cricket Australia person on site. It is not clear how, if at all, this would have applied to this particular incident. The plan does, however, provide that the first responders, namely those first at the incident, are responsible to engage the necessary emergency services and provide them with as much information as possible. This is to be done in conjunction with the provision of first aid, and it is provided that "*supervisor or other team member should assist*". Your Honour may, after hearing the evidence, consider that there would be benefits in making it abundantly clear that those who are with the medical officer should be given responsibility, in liaison with the medical officer, of calling for emergency services with the benefit of the direct input from the medical officer as to relevant information.

63. It is not, however, clear whether or not there was any debriefing at the start of the game as to the location of medical equipment that day and if so who attended, nor whether or not there was any allocation of responsibility that day as regards contacting emergency services or arranging for the point of entry for emergency services.

64. There is, in the brief, also a medical plan applicable to a somewhat later Sheffield Shield game, which took place in December 2014. That document details the equipment to be supplied by Cricket NSW (although not the location of that equipment) and provides a specific procedure to be followed in the event that an ambulance is required. This provides that a request for an ambulance is to be made from the team doctor directly to either the State Event Manager or the Operations Manager, and that the State Event Manager and the Operations Manager are the only parties who are permitted to call an ambulance to the venue. Those persons are then to log the estimated time of arrival, the arrival point of the ambulance, and the direction the ambulance will be coming from. Security guards are then to clear the arrival area and to

escort the ambulance to the destination point. The designated ambulance arrival point at the SCG is gate 9.

65. A later medical plan, applicable to a 2015 Sheffield Shield game, provides in addition for attendance at the match of intensive care paramedics, and provides in addition that in the event of a player suffering an emergency the team doctor will be the first responder on field and that the team doctor is to use one of two fixed arm signals to indicate, in particular, that "*urgent medical attention [is] required. All equipment and resources needed*". A Match Day Safety Checklist was introduced in the 2015/16 cricket season and applies to Sheffield Shield matches. Cricket Australia has advised those assisting your Honour that a medical briefing now occurs before the commencement of play for all international and domestic matches.

66. Since this incident, a number of changes have been made to arrangements for Sheffield Shield games. These include arrangements to ensure that a paramedic, as well as a State Medical Officer and team physiotherapists, is in attendance at each game and a Sheffield Shield Medical Handbook has now been developed. Further, a medical briefing is to be held at all tournaments before the commencement of each day's play. At this meeting the personnel and process designated to call an ambulance is to be identified. During this inquest it is hoped that further information about how this works in practice will be put before your Honour.

67. The Trust's emergency response procedures were set out in its *SCGT Emergency Medical Response Procedure 2014.* A 'code blue' was to be referred to when a medical emergency was identified and the Chief Warden was to be notified. The Chief Warden on the day was Scott Henderson, who was the Trust's Events and Operations Co-ordinator and who made the first call for an ambulance.

68. The Trust also had a '*First Aid and Medical Treatment Policy*' introduced on 8 March 2013. This was a policy which was separate from the Trust's Emergency Management Plan. The policy expressly stated that it did not apply to the treatment of professional sports persons and/or match officials within the precinct. It further stated at clause 6 that during sporting events the Trust "*assumes responsibility for the provision of first aid and/or medical services to all persons with the exception of professional sports persons, performers, match officials*".

69. The Trust's practice as at November 2014 was not to assume responsibility for medical emergencies and medical treatment involving sporting players, but there was no policy document or agreement documenting this at the relevant time. This is consistent with clause 3 of the First Aid and Medical Treatment Policy which said that it had been "*agreed with all hirers that the treatment of professional sportspersons is the responsibility of the hirer and that no treatment of professional sportspersons is authorized unless express permission is given from any given professional sports team's/individual's physician*". Whether such agreement was in fact made is a matter that your Honour may wish to consider during this course of this inquest, albeit that the only possible relevance of this would be to the question of the clarity of the arrangements in place at the time as regards the calling of an ambulance. In this regard, the policy provided at clause 10 that "*in the instance where a first responder is unable to directly contact emergency services, a Trust representative (i.e. Trust Security) is able to contact emergency services on request. The Trust will use best endeavours to ensure accurate information is provided to the emergency services operator. Whenever emergency services are contacted to attend the precinct, Trust Security should be informed immediately so that provisions can be made for vehicular access into and around the precinct*".

70. The expectation of the relevant personnel present at the match as to who would be calling an ambulance will also be explored, including whether there was any understanding at the time as to how and by whom an ambulance was to be called, and to which entrance of the SCG an ambulance was to be directed.

71. The Trust revised its First Aid and Medical Treatment Policy in December 2014 following a review of this incident. This policy firmly places responsibility for the provision of first aid or medical services to professional sportspersons upon the hirer rather than upon the Trust. It provides that the Trust will provide first aid and/or medical assistance to injured professional sportspersons "*only when expressly requested by a professional sports team or performer's physician*". It also provides that the Trust will, at the request of the hirer, provide access to a Medicab but limits the permissible role of the driver. As regard management of emergency services, this document provides that "*Contacting emergency services is not the responsibility of the Trust in all cases. It is assumed the person closest to the patron has the most accurate understanding of the patient's condition and can therefore provide expedited responses to emergency services operators*". It would seem likely that the reference in this document to "*the patron*" is meant to be to "*the patient*". The policy further provides (as did the 2013 policy) that "*In the instance where a first responder is unable to directly contact emergency services, a Trust representative (i.e. Trust security) is able to contact emergency services upon request. The Trust will use best endeavours to ensure accurate information is provided to the emergency services operator*".

72. The revised policy coincided with the introduction by the Trust of Player and Officials Emergency Medical Plans or POEMs, which were introduced again following the Trust's review of this incident. The POEM is to be completed by the venue hirer prior to the commencement of an event at the SCG. It says that

it is designed to "*clarify protocol between venue resources and hirer resources and provide a basis for clear direction in a medical emergency which involves a professional sportsperson or match official*". Consistent with the December 2014 version of the First Aid and Medical Treatment Policy, under the POEM responsibility for signaling for appropriate resources and contacting emergency services in the case of a medical emergency involving an injured player or official rests with the hirer's medical representative or an assistant. During the course of this inquest your Honour may wish to consider the effectiveness of the POEM and the way in which it has been implemented by the Trust.

73. It is anticipated that a witness from the Trust will attend to explain these procedures and also to explain what procedures were in place at the time of this incident and how they operated.

74. Your Honour is also likely to be greatly assisted in considering the recommendations already made by Cricket NSW and by the Sydney Cricket and Sports Ground Trust directly in response to this incident in relation to emergency management and medical emergency procedures.

Helmets and protection against this injury

75. At the time of the incident Phillip Hughes was wearing a Masuri original series Test Cricket helmet, a model which was manufactured between 2005 and 2013. It was manufactured from a composite structure of fibreglass shells and polyurethane foam. There is no suggestion that it in any way malfunctioned or was damaged prior to the incident, although the clip was probably damaged when Phillip Hughes hit the ground. However, the area where Phillip Hughes was hit was an area of his neck on the left hand side which was not protected by his helmet.

76. As at November 2014, the most recent Australian Standard for cricket helmets dated from 1997, and was known as ASNZS 4499:1997. The most recent British Standard was from December 2013: BS7928:2013. There is some lag

time between the adoption of a new standard, and the production of helmets in compliance with the standard. From 15 February 2015, the International Cricket Council notified all member Boards that the 2013 British Standard would be the new de facto international standard for cricket helmets. From 18 March 2015 the 1997 Australian Standard for cricket helmets was withdrawn, and from 18 June 2015 that Australian Standard was determined to be obsolescent. It is understood that there is no current standard to move towards a new Australian standard. De facto, therefore, it appears that the only applicable standard applicable to cricket helmets is the 2013 British Standard. The available evidence indicates that Phillip Hughes' helmet complied with the Australian Standard but not with the 2013 British Standard, assuming it had been manufactured prior to the manufacture of 2013 standard compliant helmets, as the evidence from Masuri suggests. It does not appear that the British Standard helmet would have offered any additional protection at the relevant location of Phillip Hughes' injury.

77. Since October 2015 Cricket Australia has required all players wearing helmets when representing Cricket Australia or participating as State or Territory representatives in Cricket Australia competitions to wear helmets that comply with the 2013 British Standard.

78. Since the incident Masuri has produced a product called a "stem guard" which clips onto a cricket helmet and provides additional protection in a flexible form in the neck area. In the evidence before your Honour, Sam Miller, Managing Director of the Masuri Group Ltd explains that this was developed as a direct response to the incident involving Phillip Hughes to provide additional protection in the neck region. A number of the cricketers who have provided statements have indicated that they sometimes, or always, wear the stem guard. Impact tests in relation to the stem guard have been included in the brief of evidence. As may be expected, that testing does not look specifically for whether or not the equipment would protect specifically against the mechanism of injury sustained by Phillip Hughes. Rather, it tests for the effect of impact upon the equipment.

79. Professor Owler, expert neurosurgeon who reported on the cause and mechanism of Phillip Hughes' death, has considered the potential for helmets to protect against the risk of fatal traumatic vertebral artery dissection such as that which lead to Phillip Hughes' death. In his view, improved helmet design may have a limited role in preventing this injury in the future. This is because the role of a helmet is in reducing the force applied to the head, whether by absorbing the energy or by deflecting the blow. However, he says that it is less likely that helmet design could prevent the resulting movement of the head relative to the cervical spine, which lead to the dissection of the artery and caused the death of Phillip Hughes. He also says that any restriction of head movement may be counterproductive in terms of prevention of other injuries.

80. Professor Owler also considered the role of a measure, short of an extended helmet, aimed at maximizing impact absorption over an area beyond the area of the helmet itself, but aimed at maintaining freedom of movement. He considered that this may reduce the force applied to the head or upper neck but would not address the mechanism of injury in terms of the movement of the head in relation to the neck. Thus, whilst he says that it may reduce the risk of vertebral artery dissection leading to subarachnoid haemorrhage, it is unlikely to prevent it completely.

81. Professor Duflou agrees with these conclusions. These matters will be considered in oral evidence.

82. At the time of this incident Cricket Australia had Clothing and Equipment Regulations which provided that players were required to wear a helmet of an agreed manufacturer and for Sheffield Shield matches the helmet was to be of a design approved and advised by Cricket Australia. Cricket Australia also now has a Concussion and Head Trauma policy which expressly requires that helmets be worn and recommends the use of products or attachments that provide additional protection for "*the vulnerable neck/occipital area of the batsman*".

83. A document included in the brief also suggests that in 2016 it was proposed that there be a change to playing conditions to make the wearing of helmets mandatory when a batter is batting against fast or medium paced bowling. It appears that this has been implemented as regards the Australian cricket team, and also for teams competing in Sheffield Shield matches. The current Cricket Australia State Clothing and Equipment Regulations provides that "*players representing Australia must wear a helmet at all times when: (a) batting against fast or medium faced bowling; (b) wicket-keeping up to the stumps; and (c) fielding in a position closer than 7 metres from the batter's position on the popping crease on a middle stump line (such as short leg or silly point), with the exception of any fielding position behind square of the wicket on the off side*". The Sheffield Shield Playing Conditions 2016/2017 stipulate a requirement that a batsman must wear a British Standard 2013 compliant helmet at all times when batting against fast or medium-paced bowling.

84. Cricket Australia have also instructed all of its contracted players to wear a helmet which complies with the British Standard during training sessions organized by Cricket Australia in certain circumstances including when batting against fast or medium-paced bowling. Cricket Australia has proposed a working party to begin the process of developing a British Standard for neck protectors and has done preliminary research into whether neck protectors as currently available provide appropriate protection to players.

85. Cricket Australia also recommends that its contracted players wear neck protectors on British Standard compliant helmets.

86. As to prevalence of an injury such as this in cricket, there is very little evidence. Professor Duflou's evidence and the scientific literature he attaches suggests that vertebral artery dissection per se is not uncommon, but that vertebral artery dissection leading to intracranial haemorrhage is rare but not unheard of in contact sports. Dr Orchard has prepared a table of concussion and head injury cases of which he is aware from 2013 onwards. That includes 6 cases in which cricketers were hit on the neck or neck guard, one of which

was fatal. It is not known whether or not the cause of death was the same as that for Phillip Hughes.

87. One issue raised in the issues list is whether any protective equipment could have prevented the injuries which Phillip Hughes suffered, or their consequences. The evidence of Professor Duflou and Professor Owler goes to that issue, as does the evidence from Masuri in relation to the stem guard product. Your Honour may also wish to consider, during the course of this inquest, whether there is any merit in further consideration being given to the potential for protective equipment to protect against this mechanism of injury. The matters that may bear on this may include whether the apparent relative lack of reported occurrences of such injuries in the context of cricket, and any uncertainty as to how protection could in fact be achieved, would make it either necessary nor desirable for any such further consideration to be given.

KRISTINA STERN

PETER AITKEN

10 October 2016