



LOCAL COURT of NEW SOUTH WALES

Coronial Jurisdiction

- Inquest:** Inquest into the death of Daryl HAMILTON
- Hearing dates:** 6-9 February 2012
- Date of findings:** 16 November 2012
- Place of findings:** State Coroner's Court, Glebe
- Coroner:** Deputy State Coroner H.C.B. Dillon
- Findings:** I find that Daryl Hamilton died on 22 February 2022 at the St George Hospital, Kogarah, New South Wales due to traumatic neck and hypoxic brain injuries suffered in a high-speed powerboat race accident on Kogarah Bay.
- Recommendations:** *To the Australian Power Boat Association:*
- That the Australian Power Boat Association adopt and implement the steps identified in the letters of its solicitor, Mr Sam Macedone, to the Crown Solicitor's Office of 25 July 2012 and 1 November 2012, as follows:
- (i) That the Australian Power Boat Association amend its Rule Book to include a rule that no APBA sanctioned race is to start until the starting official is satisfied that all boats are in their allocated pole position.
 - (ii) That the Australian Power Boat Association consult with the NSW Water Police or another

police service concerning the establishment of procedures for preserving vessels and other evidence where a power boat has been involved in an accident at an APBA sanctioned event.

- (iii) That the Australian Power Boat Association consult with the NSW Ambulance Service or another ambulance service to compile a checklist of the necessary medical and emergency equipment to be carried by all suitably qualified paramedical personnel engaged at any APBA sanctioned event.
- (iv) That the Australian Power Boat Association amend its Rule Book to include a rule that the trim system of a boat be examined to ensure that it is correctly operating as part of the scrutineering checklist conducted at APBA sanctioned events.
- (v) That the APBA amend its rules in respect of requirements for safety capsules and safety harnesses in racing vessels in accordance with its proposals that:
 - (a) The APBA rules will require that a reinforced cockpit and safety harness, approved under its rules, are to be mandatory on all inboard hydroplanes fitted with an engine of 4301cc capacity or greater, including newly constructed and existing vessels, and will encourage the fitting of reinforced cockpits and safety harnesses in any vessel with an engine capacity below 4301cc.
 - (b) The APBA rules will require that an approved reinforced cockpit and safety harness be mandatory on all inboard displacement vessels fitted with an engine capacity of 5,201cc or greater, including newly constructed and existing vessels, and will encourage the fitting of a reinforced cockpit and safety harness in any vessels with an engine capacity below 5201cc. Pro Stock Class vessels and/or other vessels fitted with engines with a capacity in excess of 5201cc but which are fitted with modified engines limiting their speeds to less than 105

mph are exempt from this rule. The APBA will, however, encourage the fitting of both reinforced cockpits and safety harnesses in such vessels.

- (c) The APBA rules will require that all classes of boats with engine capacity less than those referred to in (i) and (ii), above, be limited to a maximum racing speed of 105 mph. The APBA will give consideration to the placement of GPS equipment in all vessels of any class where they wish to participate in a limited speed class event, for the purpose of the scrutineering of race speeds.
- (d) The APBA rules will require clubs organizing events under its auspices meet a minimum standard set by it for first aid equipment available at those events, either by clubs purchasing / hiring the relevant equipment or by requiring that paramedics hired to attend events bring a standard kit including defibrillators, oxygen and bag valve masks and any other equipment listed by the APBA. The APBA's safety officers or committee should compile a list of such equipment in consultation with the NSW Ambulance Service.

I also recommend that:

- (e) The APBA will conduct detailed and ongoing reviews of all inboard and outboard racing classes with a view to ensuring that racing classes will be established to cater to the speed capabilities of vessels rather than engine capacity, to ensure the safety requirements of each class are reflective of vessel speed and resultant risk.
- (f) The APBA will continue its review of racing classes in order to monitor and manage the speeds of individual classes and, where it considers necessary, will introduce additional safety measures such as reinforced cockpits to any class where it is

considered in the interests of safety. The APBA will continue to seek and receive information from local and overseas experts with a view to adopting additional safety equipment and racing practices as they become available.

To NSW Roads and Maritimes Services:

That NSW Roads and Maritime Services takes action to amend the conditions of licences for powerboat races under its jurisdiction to require that licensees be required to conduct and manage the event in accordance with the rules of the APBA (as amended from time to time and including requirements concerning the specifications of competing vessels and safety equipment of crews) or, alternatively, (upon the request of the applicant for an aquatic licence) under rules verified by an independent expert appointed by the RMS as being of an equivalent or higher safety and technical standard to the APBA rules.

To the NSW Minister for Transport and NSW Roads and Maritimes Services (or whichever is most appropriate):

That the Minister or Roads and Maritime Services (whichever is more appropriate) explore the question of setting national safety standards for powerboat racing with their interstate equivalents through either the National Maritime Safety Committee or another more appropriate intergovernmental body with a view to establishing such standards in appropriate regulatory form.

To the NSW Minister for Transport and the National Maritime Safety Committee:

That they consider the issue of licence conditions for aquatic events and the question of safety capsules and harnesses and establish a short, economical but reasonable consultation process open to relevant bodies and individuals.

File numbers: 0511/09

Representation:

Mr A. Casselden (Counsel Assisting) instructed by Mr J. Herrington (Crown Solicitor's Office)

Mr N. Chen (counsel) instructed by Mr B. Thomas for the Hamilton family

Mr S. Macedone for the Australian Power Boat Association and St George Aquatic Club

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REASONS FOR DECISION

Introduction

1. On 22 February 2009, Daryl Hamilton, a highly experienced powerboat racer engaged in a drag race on Kogarah Bay, suffered a catastrophic accident in his boat. While the boat was travelling at approximately 100 mph, the bow lifted and the boat became airborne and crashed. Mr Hamilton was thrown out of the cockpit and hit the water at high speed, suffering fatal injuries to which he succumbed the following day in St George Hospital.
2. Before considering the evidence, it is important to remember that at the centre of the inquest is human being who was loved and mourned by his family and friends. Out of respect for his family, because it was their preference, I will refer in these findings to Mr Hamilton as Daryl. At the time of his death he was 45 years old. He was the son of Fred Hamilton, husband of Sharon and the father of two children, Ashleigh and Brooke. It has been very evident from statements made by those who knew and loved him that Daryl Hamilton was much loved and remains much missed.
3. Daryl loved water-sports and racing. His father Fred had been an Australian and Victorian champion racer and the extended Hamilton family continues to maintain an intense interest in the sport. Daryl was a highly experienced and gifted competitor and he and his team, including Fred, designed and raced one of the fastest powerboats in Australia. This tragedy has left lasting effects not only on his family but on the wider community, especially the tight-knit powerboat racing community.

The coroner's role

4. An inquest is not a trial but a judicial inquiry into a sudden and unexpected death. It is a search for truth. It is intended to be an independent, objective, fair examination of the available evidence relating to the circumstances of a person's unexpected or unnatural death. The evidence available to a coroner is necessarily incomplete because the primary witness to the circumstances of his or her death is the person whose death is being investigated. The search for truth, therefore, may not answer all the questions raised by an unexpected or unnatural death.
5. The Coroners Act requires me to seek to determine the identity of the person who has died, the date and place of death and the cause of death. None of these matters are controversial. I am also required to determine if possible what the Act describes as "the manner of death", in other words, how did this death come about. The focus of this inquest is on the circumstances of Daryl Hamilton's death.
6. A coroner may also make recommendations relating to the death if it appears necessary or desirable to do so. I propose to make a number of recommendations at the conclusion of these findings.

Background

7. Daryl, his father Fred and his nephew, Michael Walls formed a crew to race a very fast hydroplane boat called *KT11*. They combined a vast amount of experience in the sport and with this boat. It is a 6.5 metre timber tunnel hull boat powered by a 6.0 litre V8 Chevrolet inboard engine connected to a stern drive leg fitted with a 13 inch propeller with a 26 inch pitch. The boat was approximately 30 years old and due to her age was not required to be fitted with a reinforced cockpit or safety cell/capsule or safety harness.
8. On Sunday 22nd February 2009 Daryl was a competitor in race 16 of the Speedboat Spectacular or the 'Kogarah Bay Drag'. As the name suggests the "Kogarah Bay Drag" is a race which involves competitors racing in a straight line. Boats reach speeds of up to 120 mph. The race commences at the northern end of Kogarah Bay with competitors lining up approximately 5 to 6 metres abreast of each other and then racing in a straight line towards the finish line at the southern end of Kogarah Bay. The total distance of the drag race is approximately 600 metres, with an average race taking anywhere between 15 to 20 seconds.
9. Nine boats competed in the race. Some of the evidence suggests that there was some confusion amongst some drivers as to which pole position they were to take before the race commenced. The conditions on the day for racing have been variously described as "excellent", "perfect", and "fine". There was little or no breeze or boat wash.
10. Daryl's boat was scrutineered by Officials and found to be in a race-worthy condition. Daryl along with other drivers also attended a safety briefing prior to racing and was subjected to a breath test by police prior to racing. Records indicate he returned a negative result on the breath test.
11. While competing in the race, Daryl's boat became airborne and flipped over backwards at high speed resulting in him being ejected from the boat and fatally injured.
12. Video footage of the race shows that a number of boats, including *KT11*, converged approximately half way through the race. Shortly thereafter the bow of Daryl's boat is seen to lift and then, as the airflow catches the boat like a wing, it is flipped over backwards. Evidence has been given that *KT11* was capable of a top speed of about 120 mph. Although it is now impossible to determine its exact speed at the time it became airborne, it is likely that the *KT11* was travelling at about 100 mph.
13. Although the boats were very close together at the time of the incident, the weight of the evidence suggests that no other boat in the race collided with the *KT11* prior to the incident. Investigations of *KT11* and the other boats revealed no obvious damage to indicate a collision between *KT11* and another boat. Statements were also obtained from a number of drivers who all indicated that they did not collide with Daryl's boat during the race and that they did not see any other boat collide with Daryl's boat.

The issues

14. The primary issue to be considered by this inquest is how this tragic incident came about. What were the factors that caused or contributed to *KT11*'s bow lifting and the boat subsequently flipping over backwards?
15. The second main issue is whether the safety precautions before, during and after the race were adequate.
16. The final significant issue to be addressed is whether the investigation of this incident suggests that safety precautions for high-speed motorboat racing ought be improved.

What caused the accident?

17. In simple terms, the accident was caused by excessive airflow developing under the hull of the *KT11*. It was planing on its sponsons. Excessive airflow beneath the hull caught the bottom of the boat like a wing and thrust it upwards, causing a catastrophic loss of control and the boat to become airborne. The much more difficult question is why that excessive airflow suddenly developed at that point.
18. The evidence concerning the crash, including video footage from a number of angles, was thoroughly examined by Mr Nayland Aldridge, a highly-credentialled independent maritime crash investigator of great experience.
19. In addition to the high speed of the boat and its design for high-speed racing, Mr Aldridge considered a number of possible causes or potential contributory factors:
 - Wind gusts
 - Disturbed airflow from other vessels
 - Waves or wash
 - Excessive trim.
22. Although he did not absolutely exclude any of the first three factors, he viewed them as less likely to have caused the accident than excessive trim.
23. His examination of the video footage and other evidence suggested that winds were light and, to the extent that they affected the course, were blowing at approximately right angles to the course and were therefore unlikely to blow under the bows of *KT11* as it ran down the straight. He discounted wind gusts for this reason. Evidence from other boat drivers suggests that there was little wind at play on the course at the time of the race.
24. Of course, as counsel for the Hamilton family argued, this does not mean that wind can be excluded as a possible cause. It simply means that there is no positive evidence suggesting that it was the cause. Leading Senior Constable Buchanan, the officer in charge of the investigation and an experienced water police officer, left open this possibility.

25. Mr Aldridge also discounted disturbed airflow from other vessels because none of *KT11*'s rivals appeared close enough to *KT11* to cause the kind of disturbance that would throw the boat significantly off balance so as to cause its bows to rise in the way they did. He noted that when *KT11* started to rise at the bows, only two boats were ahead of it, both more than a beam width to either side. He thought it unlikely that their slipstreams could have been funneled under *KT11*. The very fast hydroplane *Mathemagic* was astern of *KT11* as it started to take off and therefore could not have caused any relevant disturbance of airflow. Leading Senior Constable Buchanan also left open this possibility and that of wave or wash action on the boat.
26. As far as can be told by the video footage, waves and wash appeared to Mr Aldridge to be insignificant causal factors as well. A few seconds before taking off *KT11* is seen to bounce a number of times as it appears to cross the wash of leading boats, then seems to settle in the water before commencing to rise. This suggests that the direct effect of wash had passed by the time the boat started to rise.
27. By a process of elimination and deduction, Mr Aldridge concluded that the most likely cause of the accident was, therefore, excessive trim. The term "trim" refers to the fore-and-aft configuration of a vessel (a vessel may be trimmed by the head or the stern, that is, may ride with a low bow or stern) or to the actions of the crew to achieve that configuration. A racing boat is usually trimmed by the stern and rides with a high bow. In boats like *KT11*, the trim of the vessel can be adjusted for sea conditions by altering the angle of the stern drive leg higher or lower. Buttons for this purpose are fitted to the steering wheel.
28. *KT11* and similar craft do not carry "black boxes" or data recorders which log alterations to the trim of the boat. If, as Mr Aldridge suggests, excessive trim was the main cause of excessive airflow developing suddenly under the boat, Daryl Hamilton is the only witness to the incident who may have known what caused this to occur. Even that is not certain. He was a highly skillful and experienced racer with an intimate knowledge of his boat. Given the speed with which events overtook him, however, he is very likely to have been taken by surprise, just as were the horrified spectators who saw the accident occur.
29. Mr Aldridge suggested that, if excessive trim was the problem, it could have been caused either by mechanical defect or by manipulation of the trim by Daryl.
30. In my view, it is highly unlikely that mechanical defect caused jamming of the trim buttons. The boat had worked perfectly throughout the day until the accident occurred. It had been scrutinized and found to be seaworthy and race-worthy. Fred Hamilton, Michael Walls and Daryl himself were thorough and highly skillful mechanical engineers who respected and cared for their boat. Evidence that one of the trim buttons was found jammed a month after the accident is most likely explained by the effects of saltwater corrosion caused by the boat sinking.
31. If the trim button was manipulated, it may have been pushed intentionally by Daryl to adjust the boat's trim for some reason. It is also possible that, in the hurly-burly of the race and the convergence of several boats in the middle of it, he pushed the button accidentally. Either hypothesis is necessarily speculative.

32. Leading Senior Constable Buchanan did not offer a firm opinion as to the cause of the crash. He considered that trim, wave or wind action or wind or a combination of one or more of these factors caused the boat to flip. He did not, however, undertake the close analysis of the evidence that Mr Aldridge did nor has he had the benefit of the sophisticated training in maritime crash investigation Mr Aldridge has had. In any event, his experience and opinions do not contradict those of Mr Aldridge.

Safety precautions before, during and after the race

33. It is self-evident that high-speed racing on land or on sea is inherently risky. At high speeds the margins of error and safety are diminished and the consequences of loss of control of a vessel potentially very serious. Hence safety precautions are essential to keep risks within acceptable limits.
34. The Kogarah Bay race was conducted under the supervision of the Australian Power Boat Association and managed according to its rules. In relation to inboard-engined vessels powered by motors of 6000cc or above not fitted with safety capsules, the July 2006 Rule Book (which applied at the time of the race) recommended, but did not require, that crews wear helmet restraints secured to the body or arms by straps. Such helmets are required to have breakaway clips attached.
35. The rules also required that vessels of the KT/hydroplane class built after 1984/5 be fitted with a safety capsule or reinforced cockpit. The *KT11* was built in 1982. Nevertheless, a sister vessel *Tattoo* was retrofitted with a safety capsule.
36. In Mr Aldridge's opinion, Daryl may not have lost his life had he been wearing helmet restraints or his boat had been fitted with a safety capsule or both. In his view, "such features are intended to mitigate the risks of an extreme sport and as such should never be optional." This issue will be further addressed below.
37. The safety procedures for the race complied with the rules set down by the APBA and the Union Internationale Motonautique (the international powerboat racing body). The outgoing commodore of the St George Aquatic Club, Mr Robert Taylor, conducted a risk assessment of the course in late 2008. No significant hazards were identified and there is no evidence that any unidentified hazard caused or contributed to the accident.
38. On the morning of 22 February 2009, before racing began, Ms Nicole Kirkwood, the club commodore, conducted a safety briefing for all crews. The drivers of all boats were very experienced and there is no criticism of the briefing. All boats were required to comply with APBA and UIM rules. Committee members of the club acting as scrutineers carried out safety checks on all racing vessels. No fault was found with *KT11*. Evidence was given, however, by Mr Paul Wallington that it was up to the drivers to check their own trim controls. All drivers were alcohol-tested. Daryl had a zero reading. Boats are required to be in radio contact with a control tower at the clubhouse.

39. The course was appropriately marked and safety barges were positioned at each end. Two paramedics and two rescue divers were stationed on the rescue barges. Seven course boats were used as marshals and tow-boats. There was no ambulance at the club in case of accidents but there was an ambulance station at Rockdale. APBA rules do not require that an ambulance be on standby at a race location where there is an ambulance station within 10 kilometres. The paramedics were equipped only with basic first-aid kits.
40. As soon as Mr Hamilton's boat flipped into the air, the closest rescue barge immediately went to his aid. The driver of the *Black Thunder*, Mr Moloney, threw himself into the water and supported Daryl who was unconscious. He was not breathing when the rescue barge arrived very soon afterwards. Mr David Isherwood, the rescue diver, entered the water and took over from the other driver. A backboard was placed under Mr Hamilton who was then lifted onto barge. Mr Justin Jones, a NSW Ambulance Service paramedic, immediately began CPR. On shore, a trauma nurse, Ms Colleen Kenyon, and a paramedic, who were spectators at the races, assisted with first aid and CPR. An ambulance arrived shortly after the barge reached shore. Mr Hamilton was treated and taken to St George Hospital.
41. Ambulance service records show that a call was received at 2.26pm. The call was completed at 2.30pm when two ambulances were dispatched. The first arrived about nine minutes later at the club.
42. For the drag race, Ms Kirkwood planned pole positions. The *KT11* was positioned in the middle of the course. She stated to police "pole positions are decided in relation to safety." It appears, however, that boats sometimes do not take up their allocated positions but squeeze in the starting line where they can or go to the end of the line. In this race, one boat changed positions because of obstruction by a buoy on the course. This, however, does not appear to have contributed to the accident. Lanes are not marked in powerboat races because of the danger of boats becoming entangled in lines or hitting buoys. Boat drivers therefore generally find an aiming point beyond the end of the course and steer for that during the race. For the drag race, the boats had virtually the width of the bay (approximately 500 metres) at their disposal. Minimum distances apart were not mandated by APBA rules or the St George club but, according to Ms Kirkwood, boats generally keep a minimum of approximately 2-3 metres apart during a race.
43. Although it is not possible to say whether it had any effect on Mr Hamilton's boat or the way he drove it, it was clear from the video footage of the race that there was some degree of convergence or "funneling" of the race boats during the drag race. Without marked lanes, this is likely to be almost as common in drag races as it appears to be in circuit races. The funneling effect is not necessarily dangerous provided that boats do not collide or create near-misses. It is, nevertheless, undesirable because of the potential it creates for unnecessary risk.
44. The danger of collision due to funneling is likely to be greatest during the early stages of the races before the faster boats make real headway over their slower rivals. Common sense suggests that a spacing of 2-3 metres on either side of very fast boats running in parallel may leave a very small margin for error, especially if the drivers are aiming at the same point ahead, leading to convergence and funneling. Especially where there is a wide course available, such as at Kogarah

Bay, there appears to be no good reason why drivers ought not be required to space their boats much more generously and that races not be started unless the marshal or starter is satisfied that all boats have a sufficient margin.

45. Common sense also suggests that if pole positions are planned for safety reasons, due to different classes of boats racing together, races ought not be started with boats out of position unless their classes or types make the alteration insignificant. Assuming that races are run on a tight schedule, as was the case at Kogarah on 22 February 2009, the club and the APBA ought consider refusing to allow boats slow to take up their correct pole positions to race. As boats are in radio contact with the control tower, which has a view of the contestants and their positions, the controller ought be able to determine whether or not a boat is in the correct position and therefore ought be able to order it out of the race if it is not in position. (Of course, there may be situations, such as where all the race boats are similar in class and engine size, in which the pole position makes little or no difference in terms of safety.)
46. In this case, some boats started out of position. Again, it is not possible to say whether this had any effect on the performance of *KT11* but in another case there may be a significant adverse effect on safety.
47. A number of safety issues that remain of concern were examined during the inquest. First, the paramedics in attendance do not appear to have had all the equipment appropriate for providing first aid to a victim of this type of accident while awaiting the arrival of an ambulance. For example, Ms Kenyon observed that the paramedics did not have a bag valve mask, a defibrillator or oxygen which she regarded as basic resuscitation items. Certainly, this needs to be addressed if it has not already been.
48. Mr Hamilton's family also submitted that an ambulance ought be hired to provide on-site emergency care and that the fact that the ambulance took more than 10 minutes from the time the "000" call was made to arrive may have been critical or that such a delay may be critical in future. I am more hesitant about this question. The ambulance arrived within 10 minutes of being actually dispatched. Given the gravity of Mr Hamilton's injuries, and given that he had been under the care and treatment of qualified paramedics who placed him on a backboard as soon as he was lifted from the water, it seems unlikely that the 10-minute wait for the ambulance made any significant difference to the outcome.
49. In my view, it should be for organizers of such events and the ambulance service to make the judgment about whether an ambulance should be hired to standby at such events and to negotiate appropriate terms. The argument for a standby ambulance may be stronger in the country than in the city. I note, however, that an ambulance is a public resource and priority must be given to actual rather than potential emergencies. It may be possible that an aquatic club could hire an ambulance for a day on the proviso that if an emergency call comes in the ambulance will leave. Even if that were possible, another consideration is whether locating the ambulance at the club rather than at its base would reduce its capacity to respond to emergencies within its designated call-out area within the time allowed by Ambulance Service's guidelines. Improved potential safety for one

group of people could conceivably result in actual reduction of safety for another group.

Safety capsules

50. The principal outstanding safety issue, however, is the question of whether to require very fast boats to be fitted with safety capsules.
51. The hearing in February 2012 heard a considerable amount of evidence and discussion about this vexed issue. Following submissions and further discussion, I decided to seek a supplementary report from Mr Aldridge concerning the incidence of serious accidents in high-speed powerboats. The APBA co-operated in the study by providing copies of its incident reports kept since 2004.
52. In summary, Mr Aldridge found that there had been 137 incidents involving open cockpit boats recorded by the APBA. Of these, seven (approximately five per cent) had resulted in fatalities. In a further 31 incidents (or approximately 23 per cent) crews had been injured and required treatment. Therefore in nearly one-in-three incidents involving open cockpit boats crewmembers were either killed or injured.
53. Mr Aldridge found that the crews of cell cockpit boats suffered a far lower injury rate. The APBA recorded 65 incidents involving such boats. There were no fatalities and only seven crew members were injured (approximately 11 per cent). This is a rate of injurious incident of one injury every 9.3 incidents. (There were also 10 incidents involving both open and cell cockpit vessels. No injuries or fatalities were recorded in them.)
54. While these data demonstrate that boats fitted with safety cells are generally much safer than those without, the data did not allow Mr Aldridge to draw conclusions about specific classes of vessel. In his report, Mr Aldridge outlined the problem and suggested an approach:

I note that the lack of detailed conclusions may not assist the Coroner in making a meaningful recommendation regarding safety cells because he cannot easily classify which vessels should have such cells. Perhaps an option is to place the onus on the APBA to justify which classes of vessels should not have a cell. For example, Thundercats are inflatable boats and so cannot be fitted with cells. Thundercats are relatively slow vessels anyway so the risk is lower. Conversely, I think it would be difficult to argue against safety cells for the fastest classes of vessels – such as hydroplanes or Blown Alcohol Displacement (BAD) classes.

I also think that it may be possible to state a cut-off speed at which vessels must be fitted with a safety cell. I reject the notion that it is difficult to know how fast a racing boat will travel. One does not build a racing boat and hope for the best; instead one has a speed in mind and designs the vessel accordingly. The real difficulty will lie in determining the speed at which a safety cell is required. If a recommendation is made that all vessels capable of (say) 100 miles per hour are required to have a safety cell, does this imply that 99 mph is safe? I would argue that there is no such implication and that any

recommendation may even acknowledge that lower speeds remain potentially unsafe. I suggest that all vessels capable of 100 mph or more should be required to be fitted with a safety cell. I can offer no empirical basis for this speed and relied purely on instinct. It may well be that 100mph is too fast. However, setting 100mph as a cut off will ensure that the vessels at most risk are fitted with safety cells. If in future years it appears that the trend for injuries and fatalities in open cockpit boats has not reduced, then the cut off speed can be reviewed and reduced.

What is to be done?

55. Following the hearing earlier this year, the APBA also undertook to consider the issue of safety capsules and, in particular, whether members ought be required to retrofit capsules to older open cockpit boats. It also offered to consider a number of draft recommendations put to them by Counsel Assisting. Other parties, including the Hamilton family and the NSW Roads and Maritime Services, also commented on the draft recommendations.
56. The four draft recommendations were as follows:
 - (i) That the Australian Power Boat Association amend its Rule Book to include a rule that no APBA sanctioned race is to start until the starting official is satisfied that all boats are in their allocated pole position.
 - (ii) That the Australian Power Boat Association consult with the NSW Water Police concerning the establishment of procedures for preserving vessels and other evidence where a power boat has been involved in an accident at an APBA sanctioned event.
 - (iii) That the Australian Power Boat Association consult with the NSW Ambulance Service to compile a checklist of the necessary medical and emergency equipment to be carried by all suitably qualified paramedical personnel engaged at any APBA sanctioned event.
 - (iv) That the Australian Power Boat Association amend its Rule Book to include a rule that the trim system of a boat be examined to ensure that it is correctly operating as part of the scrutineering checklist conducted at APBA sanctioned events.
57. The APBA accepted these recommendations in principle but suggested a number of amendments.
58. First, it suggested that the APBA consult not only with NSW Police concerning the preservation of vessels damaged in accidents but police forces in all states in which APBA races are run. While this demonstrates the very co-operative and public-spirited nature of the APBA's involvement in this inquest, it is, in my view, unnecessary for the APBA to do this. Police practice in all states and territories in relation to the preservation of "crime scenes" or accident sites is very similar if not identical in practice. In practical terms, consultation with one police service on this issue is sufficient and to require more would be unnecessary multiplication of effort.

59. It also suggested that interstate ambulance services be consulted about a safety equipment checklist. For the same reasons, I think that this would result in unnecessary multiplication of effort.
60. More importantly, and very helpfully, it suggested further reforms of the current system. In particular, it proposed that safety capsules be made mandatory for certain classes of boats and that there be a thorough review of racing classes to determine which classes of boats ought be required to fit safety capsules. In summary, its suggested scheme would provide that:
- (i) Reinforced cockpits would be made mandatory on all inboard hydroplanes with an engine capacity of 4301cc or greater, new and old;
 - (ii) Reinforced cockpits would be made mandatory on all inboard displacement vessels over 5201cc, new and old;
 - (iii) The APBA considers 110mph to be the speed at which "the risk of significant injury/death increases". Any boats with engine capacities less than those specified in (i) and (ii) would be limited to a racing speed of 100mph. The use of GPS equipment to allow policing of speeds would be considered;
 - (iv) The APBA would conduct a detailed further review of racing classes with a view to establishing racing classes based on speed of vessels; and
 - (v) Its review of classes may also result in the introduction of additional safety measures, such as reinforced cockpits, in any class where it is considered to be in the interests of safety.
61. An additional safety measure that ought be addressed is the first aid equipment available to the paramedics at this event. In my view, the APBA ought require clubs organizing events under its auspices to meet a minimum standard for first aid equipment, either by clubs purchasing / hiring the relevant equipment or by requiring that paramedics hired to attend events bring a standard kit including defibrillators, oxygen and bag valve masks. There may be other equipment that ought be included in the standard first aid kit. The APBA's safety officers or committee should be able to put together a list of such equipment.
62. The APBA also raised the question of the licensing of aquatic events. It recommends that Australian maritime authorities license only events sanctioned by the APBA or held by clubs affiliated with the APBA. The argument put by the APBA is that while the NSW Roads and Maritime Service adopts this approach, it may not be the case interstate. Boat owners could therefore seek to avoid the safety measures being introduced by the APBA by setting up breakaway clubs interstate unless a national approach is taken.
63. Other powerboat racing associations and clubs did not seek leave to be represented at the inquest. I have, however, become aware informally that some have taken an interest in the proceedings. Their interests and possible differences of opinion with the APBA about some of these recommendations have not been considered.

64. It is appropriate that if a national approach is to be taken to powerboat racing standards and rules that all interested groups be given an opportunity to be heard. I therefore propose to recommend to the NSW Minister for Transport and the National Maritime Safety Committee that they consider the issue of licence conditions for aquatic events and the question of safety capsules and harnesses and establish a short, economical but reasonable consultation process open to relevant bodies and individuals.
65. In the alternative, I also propose to recommend to the NSW Minister that she or Roads and Maritime Services (whichever is more appropriate) explore the question of setting national safety standards for powerboat racing with their interstate equivalents through either the National Maritime Safety Committee or another more appropriate intergovernmental body.
66. Roads and Maritime Services submitted that an aquatic licence to hold an event is general rather than technical. That is, while the RMS may require the licensee to meet certain conditions, such as having safety vessels present, establishing appropriate emergency procedures and conducting the event according to certain rules, it does not have the specific technical expertise to be able to mandate rules in relation to classes of boats, engines and other specifications of high-speed racing vessels. It defers to the governing bodies of highly technical watersports as to such rules. It relies on the APBA for such expertise due to its specialized knowledge and experience in dealing with Australian and international standards concerning the safe management of powerboat racing. That knowledge and experience is, in effect, codified in the APBA's rules.
67. The Roads and Maritime Services' position, therefore, is that:

*In the dangerous and extreme sport of high speed boat racing, RMS could only be confident in safely issuing an aquatic licence for such an activity if it could be assured that the safety and technical aspects of the event were covered by the APBA rules, **or some equivalent rules of at least as high a standard...***

In the absence of any other established rule book, and given the long history of engagement by government by the APBA and its track record in continuously amending its rules in striving to improve and promote safety, RMS is of the view that (in the current climate) it could therefore only be confident in issuing an aquatic licence for a high speed racing event if it could be assured that the event would be run under the APBA rules, or an independently verified equivalent solution.

To prevent dangerous mavericks running unsafe events, this approach was also suggested by the Hamilton family in their final submissions.

68. The Roads and Maritime Services is not in a position to conduct that independent verification itself. It is reasonable to infer that maritime authorities in other states and territories would be limited in similar ways.
69. In my view, the approach taken by the RMS has much to commend it. Nevertheless, a wider consultation process would be fair to other powerboat racing associations and powerboat racers not represented by the APBA. It would also ensure that the

sport is not only protected from undue restriction because the participants would have the major voice in codifying the rules but also made safer for all participants.

70. Regardless of whether or not a national approach is taken to safety standards in the sport, I propose to recommend that NSW Roads and Maritime Services takes action to amend the conditions of licences for powerboat races under its jurisdiction to require that licensees be required to conduct and manage the event in accordance with the rules of the APBA (as amended from time to time and including requirements concerning the specifications of competing vessels and safety equipment of crews) or, alternatively, (upon the request of the applicant for an aquatic licence) under rules verified by an independent expert appointed by the RMS as being of an equivalent or higher safety and technical standard to the APBA rules.
71. In their final submissions, the Hamilton family were critical of the risk assessment conducted by the St George club officials. In particular, they argued that it did not deal with confusion about race positions and funneling of boats during the race; that it had been used repeatedly without revision and that, in effect, it had been given no genuine consideration by club officials before the event.
72. The issue of race positions has been addressed in one of the recommendations to the APBA. It is not clear that the funneling had any causal effect on this accident. My understanding is that in circuit racing funneling occurs as a matter of course. Without lane markers it is probably difficult to prevent it entirely anyway. The main protection would be to spread boats in drag races further apart at the start. In any case, the risk assessment process is not concerned with these issues as such: it is more to do with the physical conditions (most of which do not change except for the tides, currents and wind) and safety arrangements.
73. I am not persuaded that the risk assessment process, even if deficient, had anything to do with the accident. If the recommendations outlined below are adopted, however, I think the primary concerns of the Hamilton family on this point will have been addressed.

Conclusion

74. The loss to Daryl Hamilton's family, his close friends and the powerboat racing community due to this accident has been enormous and deeply saddening. Those who watched the crash of his boat with horror must have suspected the worst.
75. Although I understand that it will be of little comfort to those who feel his absence most, at least they know that he died doing one of the things that gave him most joy and, paradoxically, made him feel most alive and that he did not die alone but among those who loved and admired him, his family and his fellow racers.
76. I hope that those who mourn him will take a little solace from the fact that his death has been taken seriously by the powerboat racing community, and by the wider community, which this court represents. If a community is to work well and to protect its members, it is crucial that it takes heed of what happens to its most unlucky members, not only to comfort them or to offer our respects to them and their families, but to learn the serious lessons their injuries or deaths have to teach

us. I believe that Daryl Hamilton's death has taught us a number of lessons and his legacy will be, among other things, a safer sport for others to enjoy in future.

Findings under s 81 Coroners Act 2009

77. I find that Daryl Hamilton died on 22 February 2022 at the St George Hospital, Kogarah, New South Wales due to traumatic neck and hypoxic brain injuries suffered in a high-speed powerboat race accident on Kogarah Bay.

Recommendations under s 82 Coroners Act 2009

78. I make the following recommendations:

To the Australian Power Boat Association:

That the Australian Power Boat Association adopt and implement the steps identified in the letters of its solicitor, Mr Sam Macedone, to the Crown Solicitor's Office of 25 July 2012 and 1 November 2012, as follows:

- (i) That the Australian Power Boat Association amend its Rule Book to include a rule that no APBA sanctioned race is to start until the starting official is satisfied that all boats are in their allocated pole position.
- (ii) That the Australian Power Boat Association consult with the NSW Water Police or another police service concerning the establishment of procedures for preserving vessels and other evidence where a power boat has been involved in an accident at an APBA sanctioned event.
- (iii) That the Australian Power Boat Association consult with the NSW Ambulance Service or another ambulance service to compile a checklist of the necessary medical and emergency equipment to be carried by all suitably qualified paramedical personnel engaged at any APBA sanctioned event.
- (iv) That the Australian Power Boat Association amend its Rule Book to include a rule that the trim system of a boat be examined to ensure that it is correctly operating as part of the scrutineering checklist conducted at APBA sanctioned events.
- (v) That the APBA amend its rules in respect of requirements for safety capsules and safety harnesses in racing vessels in accordance with its proposals that:
 - The APBA rules will require that a reinforced cockpit and safety harness, approved under its rules, are to be mandatory on all inboard hydroplanes fitted with an engine of 4301cc capacity or greater, including newly constructed and existing vessels, and will encourage the fitting of reinforced cockpits and safety harnesses in any vessel with an engine capacity below 4301cc.
 - The APBA rules will require that an approved reinforced cockpit and safety harness be mandatory on all inboard displacement vessels fitted with an engine capacity of 5,201cc or greater, including newly constructed and existing vessels, and will encourage the fitting of a

reinforced cockpit and safety harness in any vessels with an engine capacity below 5201cc. Pro Stock Class vessels and/or other vessels fitted with engines with a capacity in excess of 5201cc but which are fitted with modified engines limiting their speeds to less than 105 mph are exempt from this rule. The APBA will, however, encourage the fitting of both reinforced cockpits and safety harnesses in such vessels.

- The APBA rules will require that all classes of boats with engine capacity less than those referred to in (i) and (ii), above, be limited to a maximum racing speed of 105 mph. The APBA will give consideration to the placement of GPS equipment in all vessels of any class where they wish to participate in a limited speed class event, for the purpose of the scrutineering of race speeds.
- The APBA rules will require clubs organizing events under its auspices meet a minimum standard set by it for first aid equipment available at those events, either by clubs purchasing / hiring the relevant equipment or by requiring that paramedics hired to attend events bring a standard kit including defibrillators, oxygen and bag valve masks and any other equipment listed by the APBA. The APBA's safety officers or committee should compile a list of such equipment in consultation with the NSW Ambulance Service.

79. I also recommend that:

- The APBA will conduct detailed and ongoing reviews of all inboard and outboard racing classes with a view to ensuring that racing classes will be established to cater to the speed capabilities of vessels rather than engine capacity, to ensure the safety requirements of each class are reflective of vessel speed and resultant risk.
- The APBA will continue its review of racing classes in order to monitor and manage the speeds of individual classes and, where it considers necessary, will introduce additional safety measures such as reinforced cockpits to any class where it is considered in the interests of safety. The APBA will continue to seek and receive information from local and overseas experts with a view to adopting additional safety equipment and racing practices as they become available.

To NSW Roads and Maritimes Services:

81. That NSW Roads and Maritime Services takes action to amend the conditions of licences for powerboat races under its jurisdiction to require that licensees be required to conduct and manage the event in accordance with the rules of the APBA (as amended from time to time and including requirements concerning the specifications of competing vessels and safety equipment of crews) or, alternatively, (upon the request of the applicant for an aquatic licence) under rules verified by an independent expert appointed by the RMS as being of an equivalent or higher safety and technical standard to the APBA rules.

To the NSW Minister for Transport and NSW Roads and Maritimes Services (or whichever is most appropriate):

82. That the Minister or Roads and Maritime Services (whichever is more appropriate) explore the question of setting national safety standards for powerboat racing with their interstate equivalents through either the National Maritime Safety Committee or another more appropriate intergovernmental body with a view to establishing such standards in appropriate regulatory form.

To the NSW Minister for Transport and the National Maritime Safety Committee:

83. That they consider the issue of licence conditions for aquatic events and the question of safety capsules and harnesses and establish a short, economical but reasonable consultation process open to relevant bodies and individuals.

Magistrate Hugh Dillon
Deputy State Coroner