CORONERS COURT
OF NEW SOUTH WALES

Inquest:	Inquest into the death of Alan Beeby
Hearing dates:	12 - 14 September 2023
Date of findings:	14 September 2023
Place of findings:	Newcastle
Findings of:	Magistrate Kennedy Deputy State Coroner
Catchwords:	CORONIAL LAW – maritime safety, safety standards for recreational vessels, certification of recreational vessels, product warnings for recreational vessels, code of conduct for boat brokers, Boating Industry Association, Australian Recreational Boating Safety Committee, European Union design standards for recreational vessels, ISO Standards for recreational vessels, Australian Builders Plate standard, EPIRB functionality, Halvorsen motor yachts, certification of imported recreational vessels
File number:	2020/100125145
Representation:	Counsel Assisting the inquest: Mr Callan O'Neill of Counsel instructed by Mr Paul Armstrong of the NSW Crown Solicitors Office. Mrs Lorraine Beeby, Senior Next of Kin: Mr Gordon McGrath of Counsel instructed by Mr Julien Castaldi of Sparke Helmore Lawyers.

Findings:	**The identity of the deceased** The deceased person was Alan Bruce Beeby **Date of death** 26 January 2020 **Place of death** 15 nautical miles north of Seal Rocks and 16 nautical miles east of the New South Wales coastline **Cause of death** In keeping with drowning **Manner of death** Misadventure (as a result of an inherent defect in the vessel Eliza 1 causing it to capsize resulting in drowning)
Recommendations:	To the chair of the Australian Recreational Boating Safety Committee ("ARBSC"): a. To consider what legislative, compliance and enforcement tools can be implemented to ensure domestically built and imported vessels are built to appropriate internationally accepted/endorsed standards and implement those tools; b. To consider undertaking a review of the Australian Builders Plate Standard and/or consider the adoption of any other certification mechanism, to include broader safety requirements including taking guidance from other jurisdictions for example, in the EU and the USA; c. To consider the undertaking of a review by an appropriate industry body for the implementation of an industry wide code of practice and accreditation for boat brokers and retailers of imported boats that

	ensures safety, compliance with standards and full disclosure of information is a central focus of sale; and d. To consider the undertaking of a national education campaign as to applicable safety standards, the suitability of different boat types and capabilities of such and what is required of brokers upon sale. To the CEO of the relevant maritime regulatory body in each state and territory: a. That they contact each owner of a Halvorsen 40, 42 and 44 vessel registered in their jurisdiction and alert them to the findings of this inquest. I also direct that the following be contacted and alerted to the findings of this inquest: a. The minister responsible for maritime safety in each state and territory; b. The Federal minister responsible for maritime safety; c. Maritime insurance companies (from the list provided by the BIA); d. The boating industry press (from the list provided by the BIA); e. The current broker of Peta Emma (including as to the need to obtain legal advice); f. The current owner of Peta Emma (including as to the need to obtain legal advice); and g. The Halvorsen Owners Club.
Non-Publication Orders:	Nil

TABLE OF CONTENTS

INTRODUCTION

1. Mr Alan Beeby was a much loved, energetic, healthy and fit 74-year-old man. He had just purchased a Halvorsen 42 Coastal Cruiser known as “Eliza 1” from the Gold Coast. He and his son, Scott Beeby were in the process of bringing it home to Lake Macquarie, when an inherent defect in the design of Eliza 1 caused it to capsize.

2. At around 6.00pm on Friday 24 January 2020, Alan and Scott Beeby left the Southport Seaway. The trip was expected to take two days and two nights, depending on weather. The first part of the passage was through the night to Port Macquarie, NSW, where they called in to obtain further supplies and refuel. They left Port Macquarie, intending to arrive home at Lake Macquarie late the following afternoon.

3. In the early hours of the morning on 26 January 2020, Scott Beeby was at the helm, while his father was downstairs sleeping. The boat was on autopilot, traveling around 10 knots, the sea was following at around 1 metre, and the wind was from the northeast at 15-18 knots. The boat broached to starboard and lay over on its port side but didn’t appear to right itself. Scott Beeby could see water coming over the gunwale and rising to cover the side windows and side helm door. There was no time to retrieve lifejackets. Alan Beeby managed to get up the stairs from the forward cabin, however the vessel went completely over, and while Scott Beeby managed to free his father from the sinking vessel, Alan Beeby was ultimately lost. Scott Beeby survived after a very harrowing few hours alone in the dark.

The role of the Coroner

4. The coroner’s primary function is set out in s. 81 of the *Coroners Act 2009*. It is to make findings as to the identity of the person who has died, the date and place of their death and the manner and cause of death. The inquest is not adversarial, but inquisitorial. The focus is to determine what happened without attributing blame, guilt or making findings of liability.

5. Pursuant to s. 27(1)(c)(i) of the *Coroners Act 2009* (“the Act”) an inquest is required to be held if it appears to the coroner concerned that it has not been

sufficiently disclosed the manner and cause of death. Those factors remain unknown, and in those circumstances the inquest is required to be held.

6. In this matter the Supreme Court has already made a determination that Mr Alan Beeby is deceased, and by way of order determined the identity, date and place of Mr Beeby's death. This leaves only manner and cause to be determined.

7. I will refer to Mr Alan Beeby as "Alan" and Scott Beeby as "Scott", which is how they were each referred to during the inquest.

THE INQUEST

Reflection on the life of Alan Beeby

8. It is important to reflect on the life of the man that was lost. He was an experienced boat owner and operator, having been in the business for many years. He was also a much-loved husband to his wife Lorraine Beeby, father to three children and grandfather to six grandchildren.

9. In a beautiful and moving family statement we were able to learn more about Alan and I repeat some of that material here. He left school and undertook a pre-apprenticeship course at TAFE before commencing an electrical apprenticeship at Downings in Parramatta. He was industrious and a role model to many and was hardworking being self-employed for most his working life. He ran a number of successful businesses ranging from the Killcare Marina to various hospitality businesses in Newcastle.

10. He had owned many vessels throughout his lifetime. In the 1970's and the 1980's, as the owner of the Killcare Marina on the NSW Central Coast, he was involved in working on, and maintaining, vessels of all kinds. He was very experienced on the water and had undertaken many boat deliveries from Sydney to Lake Macquarie. He was recognised as being capable and knowledgeable in the boating and marine environment. He shared his passion for the water with his son Scott.

11. Alan was described as having an easy way that was endearing to many. Above all, he valued time with his family. He was intelligent, a planner and thinker with a cheeky wit. He was protective of those he loved, he enjoyed listening to music, laughing and sharing time with friends.

12. He had a passion for the water and growing up he loved to surf and water ski. This purchase of Eliza 1 was a reward for a lifetime of hard work and was intended to be a place where he could spend time on the water with those he loved.

13. As was apparent to those present at the inquest, he had a strong, close and loving family.

THE HISTORY OF ELIZA 1

14. Eliza 1 was a 2008 Halvorsen 42 Coastal Cruiser which was first commissioned by Halvorsen Boat Sales Australia Pty Ltd and built by Poly Marine, located in the Southern Chinese Provence Shun De.

Photograph of 'Eliza 1' as advertised prior to its sale to Alan Beeby

First owner – Captain Christopher Coy

15. The first owner was Captain Christopher Coy ("Captain Coy) who purchased the vessel on 27 January 2010. Although the sales brochure at the time indicated the vessel was for sale by Halvorsen Boat Sales Australia Pty Ltd, Captain Coy says he bought the boat directly from Island Gypsy Pty Ltd, which was owned at the time by Mark Halvorsen.

16. From the available evidence it appears that neither Halvorsen Boat Sales Australia Pty Ltd nor Island Gypsy Pty Ltd are currently operating in Australia.

17. After purchasing Eliza 1, Captain Coy fitted a comprehensive array of electronic navigational equipment, including GPS, compass, and radar which was said by him in his statement to be of commercial standard.

18. Relevantly, Captain Coy describes the fuel system as follow:

> *"Fuel capacity is 1516 litres in two tanks port and starboard in the engine room with a connecting fuel system that could draw from either tank and return to either tank. The general means of operation was to draw from one tank and return to the same tank. Draw from the port tank and return to the port tank, however, you could also, with the opening and closing of valves, draw from the port tank and return to the starboard. In the wheelhouse above the forward windows on the starboard side, there were fuel gauges. These needed to be monitored and if one tank was showing a measurable difference to the other, one needed to change over which tank you were drawing from. Failure to do this would tend to give the vessel a list. Any prudent sailor endeavours to keep his vessel without a list."*

19. In his statement to investigating police, Captain Coy also describes the hull as being a proven design and throughout his description he complements the design features, stating he never had green water on deck and that in a beam sea Eliza 1 would hardly roll and in a head sea would handle conditions very well. However, Captain Coy also describes how the trawler-based hull was prone to excessive shearing of the vessel towards the direction of the swell, which had to be corrected by hand steering if required.

20. According to Captain Coy, he made a three-month voyage in Eliza 1 up the Queensland coast to Roslyn Bay, four trips to Harvey Bay, ten trips to Mooloolaba, and ten or twelve trips from Port Stephens to Sydney.

Second owner – Erik Waegeman

21. In April 2018, Captain Coy put Eliza 1 on the market using a boat broker. He indicated in his evidence that the reason for selling the vessel was that he had moved to Queensland and no longer required a vessel for long trips north in the winter.

22. On 14 May 2018, Mr Erik Waegeman submitted an offer that was accepted, subject to surveyor's report, sea trials and an out of water inspection which apparently found no issues as the sale went through.

23. Twelve months after the sale, Mr Waegeman commenced action in the District Court of Queensland against Captain Coy, the broker, the surveyor who conducted the pre-sale inspection, and the surveyor's company. The claim alleged that the defendants had misrepresented the condition of the vessel as being in very good condition. Amongst other issues, Mr Waegeman claimed there were various areas where structural integrity was compromised due to water ingress. This included damage to the superstructure of the vessel. The total damages claim was almost $560,000 comprising around $40,000 in repair costs already incurred and the remainder being the estimated cost to rectify outstanding problems.

24. In support of his claim Mr Waegeman filed and served a surveyor's report. This report noted several areas where water ingress had compromised structural integrity. These areas included the foredeck and various areas on the upper deck. The surveyor's report states as follows:

> *"...it is quite evident where the point water ingress is due to the fractures evident within these areas. It is difficult to determine actually how far the extent of water damage goes into areas that are not visible without intrusive inspections (i.e. cutting access into the vessel and/or core sampling) however the areas that are visible require substantial repairs."*

25. In his defence, Captain Coy refuted the substance of the claim and maintained that several of the issues identified by Mr Waegeman were due to his own poor maintenance after he had purchased Eliza 1. Captain Coy says that at the time of purchase, Mr Waegeman had his own surveyor look at the vessel and they had been in agreement that it was in good condition.

26. The first surveyor report obtained pre-purchase by Mr Waegeman was generally that the vessel was satisfactory and cracks visible above the waterline were cosmetic.

27. A vessel repair and refurbishment company had conducted some repairs on Eliza 1 for Mr Waegeman and had provided him with an estimate for the further repairs totalling around $517,000. The evidence was that further inspections

occurred on 15 August 2018 in water, and on 10 September 2018 in dry dock. The report provided to Mr Waegeman's lawyer included the following:

> *"Our assessment of the issue was that the fractures were neither cosmetic nor just a "maintenance" issue and that leaving the area untreated for an extended period of time would compromise the integrity of the deck and in turn the flybridge and spread to other areas of the vessel*."

28. A further report purportedly concluded that underlying hull layers were holding excessive moisture and had potentially rotted. It noted that cracks in the fibreglass deck were required to be sealed to prevent further water ingress in the underlying layers.

29. The vessel was assessed as being effectively worthless by one company, as at 17 March 2019. They concluded that the value of the repairs far outweighed the value of the vessel and that the vessel would never be saleable in the condition it was in.

30. The claim made by Mr Waegeman against Captain Coy and others was ultimately settled out of court with no findings of fact being made or admitted. As this is the case, I refer to those matters only as being important to ultimately determining the cause of sinking of the vessel.

Third owner – Alan Beeby

31. In late 2019, Mr Waegeman decided to put Eliza 1 on the market and engaged a boat broker to conduct the sales process.

32. As for the reason for selling, Mr Waegeman informed his broker, Mr Simpson, that the reason for the sale was that Mr Waegeman had purchased the vessel thinking it was in good condition and it ended up in litigation because he wasn't informed of the issues with the vessel, which included high moisture readings and issues with the flybridge.

33. According to his statement, Mr Simpson believed that the high moisture readings and soft spots were caused from "what we believe to be from a manufacturing error from Halverson."

34. In early January 2020, Alan called Mr Simpson to enquire about purchasing Eliza 1. Mr Simpson then sent an email to Alan attaching a specification sheet

for the vessel, the list of known defects, the list of work undertaken on behalf of the previous owner and photos of the damage to the flybridge.

35. The full list of defects provided to Alan was as follows:

    a. “The foredeck around the anchor winch/sampson post showing some moisture on moisture metre, a soft spot on bow sprit;

    b. The side deck to the port side and 1 corner of aft deck show a few loose teak planking (sic);

    c. The swim platform on starboard is showing some staining and small cracks underneath; and

    d. The upper deck in various areas including, the port side forward, mid deck, aft of the settee, both wing decks, showing levels of moisture, therefore wood rot/delamination in the GRP. Cracks are visible and require repair (removing glass, repair soft areas and re-glassing). There is a minor leak in the saloon above the table, during heavy rain, coming from the flybridge.”

36. Alan flew to the Gold Coast with Scott and Mr Israel Smith to inspect the vessel on 8 January 2020. Alan was, as previously stated, very experienced in boating. Mr Smith was a marine engineer and Scott was a marine rigger and sail maker. Scott also conducts rig inspections on all manner of yachts from 16 feet to 100 feet in length, providing information to insurance companies. He is aboard vessels almost daily. Given the significant expertise of these three, Alan decided he would not engage a boat surveyor to conduct a pre-purchase inspection of Eliza 1.

37. They arrived early and while they waited for the broker, Scott and Mr Smith boarded the boat where they found and inspected the most recent survey report and checked all works that had been noted. It is not clear which survey report this was. According to Scott, he observed Eliza 1 to be immaculate and well cared for, however Scott says he did notice the vessel listed slightly as they stepped aboard.

38. When Matthew Simpson arrived at around 9am they took Eliza 1 for a sea trial and Scott said the boat behaved and handled well even when he travelled beam-on to some large wash from another vessel just to see how the boat behaved.

39. Eliza 1 was then removed from the water and cleaned to facilitate a good inspection. The hull was assessed to ensure that it was structurally sound, and the rudder, shafts and trim tabs were all inspected. No issues were noted.

40. The boat was returned to the water and taken back to Sanctuary Cove Marina where Scott and Mr Smith checked all hoses, fittings, valves and clamps with no issues found. They reported the bilge to be clean and dry.

41. According to Scott, he believed the vessel was in exceptional condition and very seaworthy.

42. Alan agreed to purchase Eliza 1 for the listed asking price of $199,000.

43. Scott gave evidence that his father was very excited about the purchase. They considered that the price was very good, and they both approached the inspection with some scepticism on that basis, however on inspection the boat did seem in exceptionally good repair.

SCOTT BEEBY'S ACCOUNT

44. As well as being an experienced marine rigger and sailmaker, operating a ship chandlery and sail repair business in Newcastle, Scott had been involved in boating since the age of five, attending the Australian Institute of Sport as a competitive sailor. He competed at world title level in sailing and holds a NSW recreational boat licence.

45. On 14 January 2020, Alan contacted Mr Mark Lawson, a commercial delivery skipper, and asked if he could assist in taking Eliza 1 from Sanctuary Cove to Newcastle. Alan indicated that he did not have a surveyor's report for the vessel, which Mr Lawson held some concerns over.

46. On the 15 January 2020, Mr Lawson met Alan at Sanctuary Cove Marina and together they inspected Eliza 1. Mr Lawson had concerns about several aspects of the vessel, noting the navigation equipment to be old and the radar having issues with “gain". Due to these factors he wasn't prepared to run the vessel at night during the transfer. Mr Lawson considered that the aft float switch, which activates the bilge pumps, was not secured properly and the pump had a one-way valve that Mr Lawson had previously seen seize up and not allow water to pass overboard.

47. Apart from the three things he'd identified, Mr Lawson believed the vessel to be seaworthy.

48. Mr Lawson and Alan discussed travel windows and passage plans. Alan wanted to run the boat through the night, but Mr Lawson was not comfortable with this due to the issues with the radar. Mr Lawson understood that they would wait for an appropriate weather window.

49. On 21 January 2021, Mr Lawson phoned Alan and told him the next window was 25 January 2021. On 24 January, Mr Lawson again phoned to discuss the trip but because Alan was determined that they would continue through the night, he declined to undertake the delivery. Alan then asked Scott to assist with the trip south, and his son agreed.

50. On Friday 24 January, Scott flew to Queensland and met his father at the marina at 5.00pm. Alan told his son that he had completed the pre-sea checks. Scott completed a passage plan utilising the application Navionics Australia. He also had another passage plan completed by Mr Richard Arnell who was an experienced navigator and crossed checked that plan with his own to reassure himself about his passage plan and weather window. Before departing, they advised Marine Rescue via the VHF radio of their passage and intentions.

51. The two left Southport just on dark on 24 January 2020, Scott at the helm. Scott gave evidence that it was not unusual for them to travel over the course of the night, they were experienced and comfortable doing this. The intention was to do three-hour watches through the night. The first night's passage was largely uneventful. However, prior to sunrise they were both at the wheel with the vessel on autopilot. The vessel suddenly rounded up to port and water came up over the gunwales. According to Scott, this was a very unpleasant boating experience, however his father did not appear concerned and seemed to think it within the characteristics of such a vessel. Scott said that, given his father's apparent confidence, he also was not at that time concerned about the safety of Eliza 1.

52. Late in the afternoon of 25 January 2020, they went into Port Macquarie to take on fuel and supplies. They purchased about 250 litres of fuel, which took the fuel gauge to between half and three quarters. They did some maintenance checks on the boat and noted no issues. They headed back out to sea at around 8pm.

53. Scott was on the helm as his father was feeling tired and, at around 11.00pm, Alan went down to rest in the forward v-birth. Scott remained at the helm with the vessel on autopilot. The sea was following at around one metre, the wind was from the northeast at 15-18 knots and the vessel was traveling at around 10 knots. The conditions were relatively calm, which is what made the next events so very extraordinary and unexpected.

54. Scott was referencing the Navionics software when the vessel started to surf and then broached to starboard. Eliza 1 then lay over to port and water came over the gunwale and covered the side windows and the helm door. Scott originally told investigating police that he heard his father fall out of bed. However, he explained in evidence at the inquest that given the location of the bed in the bow of the Eliza 1 his father couldn't have fallen to the floor, but perhaps instead he heard him hit the wall. Scott described the loud chaos that then ensued. Objects were being displaced all over the boat.

55. The vessel was lying over on its side and because the capsize had happened so quickly Scott realised he did not have time to get life jackets. His father was coming up the stairs from the forward cabin and yelling for Scott to get the Emergency Position Indicating Radio Beacon ("EPIRB") which he was already in the process of retrieving, knowing that everything depended on that device at that point. The EPIRB fell into the water and Scott picked it up and wrapped the lanyard around his arm to keep it safe. He then opened the starboard helm door and climbed through.

56. Scott was able to reach his father's hand and attempted to pull his father from the boat, but his father became stuck underwater, on the handrail outside the door. It took significant effort by Scott however he managed to free his father and when he did Alan came up gasping for air. Scott attempted to keep one hand on the vessel and one hand on his father. He then tried to put his father's hand on the rail of the boat but, sadly, Alan's hand slipped out of Scott's grasp and he went into the water and away from Scott's view.

57. Scott had previously suggested in statements that his father was not alert during this period, however, when giving oral evidence, he had a clear recollection that his father was in fact alert and able to give instructions.

58. Amidst the terror and chaos that they were in, Scott tried his best to save his father. However, by this stage the boat was turning completely over. Scott stood on the bottom of the hull and activated the EPIRB. He then had to make the difficult decision to leave the boat as he was concerned that it would sink and realised it was not safe to remain with it.

59. Scott then swam to the inflatable dinghy which had had floated free. It was upside down and he climbed onto it. Once aboard the dinghy Scott could see Eliza 1, but could not see his father. He frantically shouted out for him. Scott described a harrowing few hours clinging to the up-turned dinghy in complete darkness. He was holding onto the EPIRB and continually pressing the activation switch as he was unsure whether it had worked or not. The EPIRB gave him no feedback as to whether the signal had been received.

60. It was hours later that the bulk carrier, MV Morobe Chief, came into view. Scott told the inquest that he wasn't sure if the large commercial vessel was there for him or whether he was in a shipping channel and was simply in the path of a ship under way. The sailors indeed were there to save him and he was taken aboard and, although language was a barrier, they treated him with kindness, compassion and care.

THE RESCUE OPERATION

61. At 2:37am on 26 January 2020, the Joint Rescue Co-ordination Centre ("JRCC"), operated by the Australian Maritime Safety Authority ("AMSA"), received an EPIRB activation from Eliza 1. The GPS co-ordinates received were 32° 20.73 South 152° 40.93 East (which is in the Tasman Sea to the East of Forster). The JRCC co-ordinated the search and rescue operation utilising aerial, and sea-based craft. This included requesting several commercial vessels to divert to the location of the EPIRB activation prompting the response by the bulk carrier MV Morobe Chief. Despite the search continuing until 6.00pm, Alan was not located.

62. At the time of the accident, the water temperature was 23 degrees Celsius and the air temperature 21 degrees Celsius. According to Dr Paul Luckin, a consultant to AMSA and an expert on timeframes of survival in outdoor and marine environments, the maximum time frame for survival for Alan would have been until 11.00am on the 26 January 2020.

INVESTIGATION INTO THE CAUSE OF THE CAPSIZE

63. When Scott was found, Eliza 1 was laying on her port side, sitting about one metre below the surface with parts of the hull breaching with the swell. Police divers subsequently inspected the vessel and noted no apparent damage or persons within the vessel. Eliza 1's insurer, Trident Marine Insurance, arranged for Eliza 1 to be towed to Botany Bay. However, entry to Botany Bay was refused and the salvage operation was redirected towards Broken Bay to the North of Sydney. Before reaching Broken Bay the tow line parted and Eliza 1 sank off Long Reef, NSW. The vessel remains on the sea floor limiting further inspections and measurements that might have assisted in determining the cause of its initial sinking, including whether it met stability standards.

64. Although no close physical examination could be conducted of Eliza1, divers from the salvage company were able to examine the wreck on the sea floor and eliminate the possibility that the hull had been damaged in some way before capsizing. The extensive video footage taken by the divers showed no evidence that the vessel had come into contact with any object or been involved in any accident resulting in damage.

Stability testing

65. Michael Minogue who once worked at Halvorsen gave evidence at the hearing and was of the view that stability and incline testing data should have existed for the Halvorsen 42.

66. The officer in charge ("OIC") did make contact and engaged with Mr Halvorsen and requested documents, however no statement by Mr Halvorsen was provided to the inquest.

67. Further attempts were made to obtain the design of the Halvorsen 42 from a company based in China, however due to claims of copyright issues it was unable or unwilling to assist the inquest further.

68. The OIC made considerable attempts to locate design details of the Eliza 1, but nonetheless was not able to find the original designs or drawings.

69. Mr Minogue gave evidence that assisted with the history of Halverson boats and in particular the decision to take the boat building operation offshore. Mr Minogue worked for Halvorsen for about 25 years from 1980 through to 2005 and for the

period 1990 to 2000 he would travel to Hong Kong to assist with quality control. He was able to give the best and indeed only evidence available to the inquest in relation to the moulds for the Eliza 1.

He described the size of the standard moulds, and it was of note that no fibreglass mould in his view and experience was sized either 42 or 44 foot. He gave evidence that it was likely that the mould for the 40 foot was extended to make both the Halvorsen 42 and Halvorsen 44 models. He was unsurprised at the stability issues and gave the account that traditionally Halverson boats were not usually designed with such height as the Eliza 1 and the Peta Emma (the relevance of which is discussed below) appeared to be carrying. He said it would appear the original designs had been modified at some stage.

Expert opinion of Andrew Dovell

70. On the 14 February 2020, Scott contacted the OIC, Senior Constable Glen Young, and informed him a vessel similar to the Eliza 1 had washed ashore at Balmoral Beach. The boat in question, the Halvorsen 44 known as “Peta Emma”, had broken free of its moorings and had wrecked on Balmoral Beach. The Halvorsen 44 is similar to the Halvorsen 42; they share the same hull but with the larger boat having extensions above the water line.

71. The Peta Emma is a 2012 model which had been purchased by its current owner from the insurance company after it beached. The new owner generously made Peta Emma available for inspection and measurement so that inherent hull stability could be assessed. Naval architect, Andrew Dovell, was engaged to complete stability testing on the vessel once re-floated. Mr Dovell holds a Masters of Naval Architecture from the University of California at Berkeley. His proficiency in technical yacht design has been widely recognised including through his involvement in five America’s Cups, serving as Designer of Record on three challenges. In 1989, Mr Dovell was engaged by the Australian America’s Cup team to bring tank testing technology to Australia. Mr Dovell is currently the Principal Naval Architect at Dovell Naval Architects.

72. Mr Dovell noted that the Halvorsen 44 is effectively identical to the Halvorsen 42, with a slightly longer cockpit with all of the changes being above the waterline. This made the Halvorsen 44 suitable to be tested to reflect the capabilities of Eliza 1.

The Peta Emma before being wrecked on Balmoral Beach

The Peta Emma on Balmoral Beach in February 2020

73. Under the instruction of Mr Dovell, measurements were taken of the Peta Emma in a process called a lines lift. From the data collected, Mr Dovell was able to draw up a set of lines in the form of a 3-dimensional computer-based surface from which the necessary volumetric parameters could be calculated. He then

conducted a series of complex calculations in relation to stability. He noted in his report that the stability of a vessel is strongly affected by its loading conditions and the conditions in which it is operating.

74. Based on the published information regarding the Halvorsen 44 relative to the Halvorsen 42, he noted that it is effectively the same hull for both, with the 44 having an extended cockpit. The differences above the waterline between the two models were identified and allowances made such that the measurements taken from the Peta Emma could be reliably applied to the Eliza 1.

75. Mr Dovell's assessment was carried out in the context of the International Standards Organization (ISO) standard '12217-1 Small Craft – Stability and buoyancy assessment and categorization – Part 1 Non-sailing boats of hull length greater than or equal to 6m'. In his opinion this standard is the most technically sound and most widely used standard for the assessment of stability of recreational vessels worldwide. Most notably it is the standard referenced in the process of achieving CE certification of a recreational craft of the size and type of the Halvorsen 42 / 44 which is required for the sale of such craft in any EU member country. These standards and requirements are discussed in more detail below.

76. The stability assessment results considered the following matters: down flooding height, down flooding angle, offset load, roll resistance to wind and waves, roll resistance to waves-RM min, and Roll resistance to waves - GZ min.

77. Mr Dovell produced two tables summarising his calculations. The first for the Peta Emma and the second for the Eliza 1. These are reproduced below:

ISO 12217 Stability Assessment Results - PETA EMMA – Fuel Cross Connect CLOSED

Metric	Critical Load Case	ISO 12217-1 para	Calculated Value	Req Value	Pass/ Fail
Downflooding Height	Maximum Load	6.1.2	0.934 m	0.747 m (minimum)	Pass
Downflooding Angle	Loaded Arrival	6.1.3	34.1°	25° (minimum)	Pass
Offset Load	LC1 & LC2	6.2	6.0°	14.3° (maximum)	Pass
Roll Resistance to Wind & Waves	Min Op Arrival	6.3.2	184 kN*m*deg	421 kN*m*deg (minimum)	Fail
Roll Resistance to Waves – RM min	Loaded Arrival	6.3.3b	28.4 kN*m	11.1 kN*m (minimum)	Pass
Roll Resistance to Waves – GZ min	Loaded Arrival	6.3.3b	0.146 m	0.316 m (minimum)	Fail

ISO 12217 Stability Assessment Results – ELIZA 1 – Fuel Cross Connect CLOSED

Metric	Critical Load Case	ISO 12217-1 para	Calculated Value	Req Value	Pass/ Fail
Downflooding Height	Maximum Load	6.1.2	0.953 m	0.747 m (minimum)	Pass
Downflooding Angle	Loaded Arrival	6.1.3	32.7°	25° (minimum)	Pass
Offset Load	LC1 & LC2	6.2	10.2°	14.3° (maximum)	Pass
Roll Resistance to Wind & Waves	Loaded Arrival	6.3.2	278 kN*m*deg	508 kN*m*deg (minimum)	Fail
Roll Resistance to Waves – RM min	Loaded Arrival	6.3.3b	31.4 kN*m	10.4 kN*m (minimum)	Pass
Roll Resistance to Waves – GZ min	Loaded Arrival	6.3.3b	0.164 m	0.297 m (minimum)	Fail

78. These results indicate that both the Peta Emma and the Eliza 1 fall well short of the minimum roll energy capacity required to resist beam waves and wind. Both also fall well short of the minimum righting arm required to resist waves.

79. These conclusions assume that the fuel line connecting the two fuel tanks, one on either side of the vessel, is closed. The stability of the of Eliza 1 would have been even less had this fuel line been open at the time of the accident which is unknown. Mr Dovell notes that:

"in a beam wind and sea state that almost all of the available righting moment is used up resisting the heeling moment due to wind, leaving virtually no righting moment to account for roll due to the wave action."

80. When he undertook calculations on Eliza 1 with the fuel cross connect open he found that it also failed the standard for offset load.

81. He found that neither the Peta Emma nor the Eliza 1 were fit for the purpose of coastal cruising. He reached this conclusion on the basis of his assessment with the fuel tank cross connections closed, being the most conservative assessment, meaning the conclusion would apply equally whether the connector was open or closed. He noted that these vessels had such a significant shortfall relative to the requirements for rolling in beam seas and resistance to waves that the vessel would be prone to capsize in beam seas in conditions less severe than those specified for ISO category B, being seas with a significant height of up to 4 metres and wind up to 40 knots. This is the category that Eliza 1 was expected to be capable of managing. His view is that the failure is due to the vessel having a relatively high centre of gravity, a large windage profile and a relatively narrow hull form.

82. Those features cannot easily be modified, so to improve stability he notes the centre of gravity could be lowered by removing weight items high up on the vessel and/or adding weight down lower. He also opined that limiting the number of passengers that the vessel can carry and the number of passengers that are allowed on the flybridge would have some positive effect on the vessel's stability.

83. Mr Dovell reviewed the evidence of Scott and noted that the sequence of events leading up to the capsize was that the vessel was running downwind at cruising speed of 10 knots when the vessel broached to starboard broadside to the wind and waves, subsequently rolling to leeward and capsizing. He noted that when the vessel broached, ending up broadside to the waves and wind it was subject to the exact scenario assessed in ISO 12217-1 section 6.3.2 Rolling in beam waves and wind.

84. Ultimately, Mr Dovell found that the considerable instability was contributory if not the root cause of the capsize. In oral evidence he was able to expand on this and noted that it was surprising that a capsize of the sort experienced by Alan and Scott had not happened earlier to this vessel.

85. Mr Dovell was asked to comment on the impact on stability of the water ingress into the plywood core of the superstructure, main deck and house sides as identified in the report provided to Mr Waegeman. He noted that these matters would have had the effect of reducing the stability of the vessel. However, he noted that ultimately if the vessel had been fit for purpose, even on a pessimistic estimate of added weight due to the defects, Eliza 1 would still have been loaded well within the criteria specified for this vessel.

86. Mr Dovell provided well considered and comprehensive analysis to support his conclusion that the capsize was a direct result of a design flaw. His analysis was contained in his initial report, and he also provided a supplementary report. His evidence in court was excellent, his ability to talk through the complex analysis was of great assistance, and through this process he was able to explain his reasoning and conclusion. Mr Dovell's evidence was critical in determining the cause of the Eliza 1 capsize. I accepted his account and explanation and am satisfied that he was able to correctly identify the cause of this unfortunate event.

87. Although the details of the original hull design could not be obtained from either Mr Halvorsen or the Chinese builder, I am satisfied through his comprehensive analysis that Mr Dovell was in effect able to accurately recreate the design for the purpose of his analysis. I also accept his opinion that the stability calculations for both the Eliza 1 and the Peta Emma are so far from meeting the minimum requirements that any error resulting from the assumptions he has made would make no difference to the conclusion that neither vessel is fit for the purpose of coastal cruising.

CAUSE OF DEATH

88. Despite a comprehensive search, Mr Alan Beeby's body was sadly never found so no autopsy to ascertain the cause of death could be conducted.

89. Dr Luckin was the survivability expert consulted by AMSA when Alan first went missing and he was of the view, taking into account time frame for survival estimates always being based on the best possible scenario, that Alan had only a very small possibility of surviving at most 1-2 hours in the conditions in which he found himself.

90. In preparation for the inquest Dr Luckin was also asked to review Alan's medical history and provide an opinion about the likely cause of death. Having done this, Dr Luckin was of the view that given Alan's immersion in water, previous coronary artery disease, chronic hypertension and asthma aggravated by saltwater aspiration, the most likely cause of death was an acute myocardial infarction.

91. In oral evidence at the hearing, Dr Luckin explained that he based this finding on the account provided by Scott initially to police, in particular that his father went limp. This account was given in a video interview conducted with Scott shortly after he had been rescued and whilst he was still aboard the police vessel taking him back to Port Stephens.

92. As noted in the analysis of Scott's evidence above, his recollection now is that his father was alert in the moments before he disappeared from his view. Alan gave Scott no indication for him to suspect that his father was having a heart attack.

93. Although the original version given by Scott was more contemporaneous to the event, it is difficult to imagine the trauma he suffered around that time and the impact this may have had on his recollection of the events that had just occurred. His evidence in the witness box was clear, measured and honest. I am satisfied on his account that his father was relatively alert and did not give any signs of suffering a heart attack.

94. On that basis I prefer the other possibility raised by Dr Luckin, which in my view considering all of the circumstantial evidence is the more likely case. I am satisfied that when Alan's hand slipped from Scott's (after he had just been underwater and then wrenched free from the railing with some force) he could not remain above water and was lost to the sea. I agree with Dr Luckin's analysis that the drowning event, based on the circumstances described, happened almost immediately after Alan lost his grip from his son.

DISCUSSION OF RECOMMENDATIONS

Certification of new vessels

95. There was a wealth of evidence given at the inquest relating to the lack of regulation in New South Wales, and indeed Australia, for imported recreational vessels.

96. In considering this issue, I was assisted greatly by the evidence given by Mr Nik Parker who is the General Manager, Member Services of the Boating Industry Association ("BIA"), which is the peak body for the entire recreational boating industry in Australia. Mr Parker came late to the proceedings, having been located only on the Thursday prior to the commencement of the inquest. His contribution at such short notice was very much appreciated.

97. Mr Parker gave oral evidence at the hearing and explained that Australia does not have inspection requirements for recreational vessels and that only commercial vessels are subject to strict regulation and testing overseen by AMSA.

98. Mr Parker told the inquest that responsibility for the safety of recreational craft in Australia lies with the Australian Recreational Boating Safety Committee ("ARBSC"). This committee comprises senior representatives from the relevant marine safety authority in each state and territory as well as federally. The purpose of the committee is to improve recreational boating safety, reduce injuries and deaths, and promote uniform approaches to the regulation of recreational vessels.

99. Mr Parker gave evidence that the ARBSC is responsible for the development and maintenance of standards relating to the Australian Builders Plate ("ABP") which is an information plate attached to most new powered recreational boats, including imported boats. The ABP provides essential information to a boat's operator regarding the safe operation of a boat. It includes information such as the boat's maximum loading capacity, maximum engine power and the flotation performance of the boat in the case of an emergency.

100. ABP information must be determined by a competent person (typically the boat manufacturer) with reference to relevant national or international technical standards. The fitting of ABPs to applicable boats is a legal requirement in all Australian states and the Northern Territory.

101. Relevantly, the ABP does not include information about a recreational boat's compliance with relevant International or Australian standards relating to the stability of a vessel in various operating conditions and loading scenarios. Mr Parker also said that the ABP was more applicable to recreational craft under 6 metres in length than to larger craft such as the Eliza 1 and the Peta Emma.

102. Mr Parker also has extensive experience of boating industry regulations in the European Union ("EU") and the UK. He gave evidence that the EU has issued a recreational craft directive that establishes design standards for boats from 2.5 to 25 metres. The various categories in the standards are as follows:

    - Category A – Ocean - is designed to undertake long voyages, and these vessels should be expected to withstand winds in excess of Beaufort force 8, as well as substantial waves above 4 metres;
    - Category B – Offshore - are vessels operating less than 40 nautical miles from shore, and managed in conditions up to 4 metre waves;
    - Category C -inshore - is a vessel build to navigate inshore such as lakes, rivers, bays and close to the shore. They can sustain up to Beaufort force 6, and waves to 2 metres; and
    - Category D – inland or sheltered coastal waters – these boats are for small lakes and rivers, with winds to Beaufort force 4, and significant wave heights to 18 inches.

103. New and used boats that are sold in Europe, regardless of where they are built in the world, must be certified as complying with one of these four categories. Such boats carry the mark "CE" which readily signifies to boat owners and potential owners that the vessel has been assessed to meet the relevant standards for the category of use.

104. The United States has a different but similar requirement for certification.

105. In Australia there is no requirement for boats sold for recreational use, whether manufactured in this country or imported, to be certified to any standards other than those relating to the ABP.

106. Mr Parker gave evidence that most Australian manufacturers of larger recreational craft export a significant proportion of their production to the US and/or the EU and would therefore meet the strict design and safety specifications required by those markets. However, imported vessels are not required to meet basic safety standards before entering the country. The less restrictive requirements of the ABP only need to be met when a vessel is registered in a State or Territory.

107. Given that commercial vessels are stringently reviewed to ensure safety requirements are met, it would seem that this lack of similar regulation for larger

recreational craft is an area that is deserving of attention. As was experienced by Alan, the consequences at sea of non-compliance can be fatal.

The sale of used vessels

108. Alan's family raised questions relating to the sale of second-hand vessels such as Eliza 1.
109. I accepted the evidence of Mr Dovell who found that the unrepaired damage to Eliza 1 that was the subject of civil action between Mr Waegeman and the first owner (and others) had no significant causative impact on the capsize. However, Scott gave evidence that his father would probably not have proceeded with the purchase of the vessel had the full extent of the damage, and especially the estimated cost of repairing that damage, been disclosed during the sale process.
110. Mr Parker gave evidence that a large proportion of sales of second-hand boats of this size in Australia are handled by brokers. He also said that there is no standard accreditation or licensing requirement for these brokers. Although many are members of the BIA, and subject to a voluntary code of practice, many are not members.
111. In response to these concerns, the family proposed the following recommendations be made to the relevant State and Territory ministers responsible for maritime safety:

    a. that marine brokers selling power boats of more than 6 metres in length should notify both existing owners and new owners that they should have the stability of the boat checked before the boat is taken into open waters;

    b. that the terms "coastal cruising" and "passage making", not be used when describing vessels for sale unless the relevant vessel meets a recognised standard for those types of operations;

    c. that a question relating to the ABP and it's true meaning be included in the suite of questions posed to applicants of a boating license (such as the presence of an ABP on a boat does not mean that a stability compliance test has occurred); and

    d. that marine brokers should be licensed, given they are potentially selling products that are technically complex and that loss of life could result if vessels are used in conditions for which they are not designed.

112. The issues raised by the family in relation to the sale of used boats are very important and the proposed recommendations have considerable merit. I have considered them carefully and believe the proposed recommendations cover the intent of most of the family's suggestions. In terms of the suggestion that a question relating to the ABP be included in the testing for a boat licence, I am of the view that more work needs to be done in the other areas addressed by the recommendations before this suggestion could be practically implemented.

Product warnings

113. In his evidence, Andrew Dovell said that the Eliza 1 (which is a Halvorsen 42) and the Peta Emma (which is a Halvorsen 44) shared the same hull with the larger boat being modified above the waterline to extend the aft deck.

114. Michael Minogue said that he believed that the manufacturer of these vessels did not have a 42-foot mould and it was possible both boats had come from the 40-foot mould. He also said that variations to the original design, mainly involving the superstructure, were made to produce a range of models.

115. I do not know whether these design modifications were made by a qualified marine architect. However, given the testing conducted by Mr Dovell and the evidence he gave at this inquest, I am satisfied that neither the Halvorsen 42 nor the Halvorsen 44 were subjected to testing against recognised international standards.

116. Evidence was also before me that it is possible that other vessels carrying different model and/or brand names may have come from the same or other manufacturers and/or the same mould and found their way into the Australian marketplace.

117. This raises the question as to the actual number of vessels currently being used in this country that may suffer from the same defects as Eliza 1 and Peta Emma. This is a major concern and, ideally, all existing owners of such craft would be alerted to the potential limitations of their boat.

118. Several witnesses at the inquest gave evidence that there is no coordinated system of product warnings to alert current owners of vessels like Eliza 1 of identified problems or risks. For this reason, I am making the recommendation

that the relevant authority in each jurisdiction identify all registered owners of Halvorsen 42's and Halvorsen 44's and alert them to the findings of this inquest.

119. Unfortunately, this does not address the concern that there may be other vessels with different brand and/or model names that suffer from similar design defects and therefore pose a significant risk to their unsuspecting owners. To mitigate this risk, I am asking that these findings be provided to insurance companies providing cover to such vessels, to the boating industry press and to the Halvorsen owners club.

120. Most importantly, a warning needs to be delivered in as many ways as possible to other owners of the 40, 42 and 44 foot Halverson cruisers, to enable them to have the opportunity of checking the stability of their vessels, and make any necessary safety modifications for the protection of their loved ones.

EPIRB functionality

121. Scott raised a question about the possibility of EPIRBs being modified to so that a person in distress has confirmation that their distress signal had been received and is being acted on. This question was raised with AMSA and the response is summarised as follows:

    a. Since October 2021, Return Link Service ("RLS") equipped EPIRBs have been available for sale in Australia. These devices can receive a confirmation acknowledgement that the distress alert signal has been received, however the acknowledgement does not confirm that help is on the way.
    b. Discussions about expanding RLS beacon technology to include Two Way Communication ("TWC") functionality are taking place. This functionality may eventually allow short, predetermined messages to be sent between the JRCC and the distress beacon. This is a future development, and a timeline for availability has not been determined.

122. Given these positive developments, I do not intend to make recommendations in relation to this issue.

CONCLUDING REMARKS

123. Alan and Scott were competent and experienced sailors. Between them they had a wealth of knowledge and conducted themselves in a safe and careful manner

when returning home after purchasing Eliza 1. They had no way of knowing that the vessel suffered from inherent design flaws that would risk their lives. They had every right to assume that a vessel of this sort complied with basic international safety standards.

124. Scott acted heroically to try and save his father in the middle of a terrifying ordeal. He managed to get his father free from the sinking vessel in an attempt to save him. Alan appeared understandably affected by the sleeping tablet that he had taken but, according to Scott, was alert enough to call out instructions to his son to grab the EPIRB.

125. Scott's clear thinking was evident from his actions following the loss of his father, regardless of the trauma and grief, he managed to follow proper safety procedure to notify the authorities immediately and get himself to safety as best he could in the circumstances.

126. The expert evidence discloses that the events that night were not as a result of poor weather or poor seamanship, but rather a result of a design fault. In short form the Eliza 1 was top heavy. In hindsight, this was reflected in the vessel moving like a "beach ball" on the waves, and in the expert opinion of Mr Dovell it was surprising that the boat had not suffered a similar fate prior to its purchase by Alan.

127. In a society where day to day products are the subject of stringent safety regulations, it is not surprising that purchasers of large recreational vessels assume that their expensive acquisitions have been built and certified to meet relevant safety and quality standards. The fact that there is no effective certification process is unacceptable and poses a risk to the lives of a significant, but unknown, number of people.

RECOMMENDATIONS

128. I make the following recommendations:

To the chair of the Australian Recreational Boating Safety Committee ("ARBSC"):

a. To consider what legislative, compliance and enforcement tools can be implemented to ensure domestically built and imported vessels are built to appropriate internationally accepted/endorsed standards and implement those tools;
b. To consider undertaking a review of the Australian Builders Plate Standard and/or consider the adoption of any other certification mechanism, to include broader safety requirements including taking guidance from other jurisdictions for example, in the EU and the USA;
c. To consider the undertaking of a review by an appropriate industry body for the implementation of an industry wide code of practice and accreditation for boat brokers and retailers of imported boats that ensures safety, compliance with standards and full disclosure of information is a central focus of sale; and
d. To consider the undertaking of a national education campaign as to applicable safety standards, the suitability of different boat types and capabilities of such and what is required of brokers upon sale.

To the CEO of the relevant maritime regulatory body in each state and territory:

a. That they contact each owner of a Halvorsen 40, 42 and 44 vessel registered in their jurisdiction and alert them to the findings of this inquest.

I also direct that the following be contacted and alerted to the findings of this inquest:

a. The minister responsible for maritime safety in each state and territory;
b. The Federal minister responsible for maritime safety;
c. Maritime insurance companies (from the list provided by the BIA);
d. The boating industry press (from the list provided by the BIA);
e. The current broker of 'Peta Emma' (including as to the need to obtain legal

advice);

f. The current owner of ‘Peta Emma’ (including as to the need to obtain legal advice); and

g. The Halvorsen Owners Club.

ACKNOWLEDGMENTS

129. I acknowledge the following for their contribution to this inquest:

a. The current and previous OICs, Mr Young and Detective Senior Constable Jennifer Ross, for an outstanding investigation. Not only were all avenues pursued, but careful thought went into obtaining expert opinion and sourcing a similar vessel to allow the provision of critical evidence.

b. The family of Alan Beeby who attended the inquest and contributed to the important review of the circumstances surrounding his death.

2. All the legal representatives who explored relevant matters to assist the coronial process.

c. The Boating Industry Association. Mr Parker and Mr Patchett provided invaluable assistance in providing information about the boating industry in Australia and the use of standards in the EU and the US.

d. The team assisting me, Mr Armstrong and Mr O’Neill. Mr Armstrong brought a wealth of knowledge to this inquest, he organised and managed the brief, the witnesses and assisted with a smooth presentation of the case. Counsel Assisting presented a very careful and targeted exploration of the evidence, navigating complex expert evidence. I thank them both for their attention to detail and assistance.

FINDINGS REQUIRED BY S81(1)

130. As a result of considering all of the documentary evidence and the oral evidence heard at the inquest, I am able to confirm that the death occurred and make the following findings in relation to it.

The identity of the deceased

The deceased person was Alan Bruce Beeby

Date of death

26 January 2020

Place of death

15 nautical miles north of Seal Rocks and 16 nautical miles east of the New South Wales coastline

Cause of death

In keeping with drowning

Manner of death

Misadventure (as a result of an inherent defect in the vessel 'Eliza 1' causing it to capsize resulting in drowning).

CLOSE

131. I again extend my most sincere condolences to Mr Beeby's family and friends. I close this inquest.

Magistrate E Kennedy
Deputy State Coroner