LCE SHOWTIME REVIEW SUMMARY

Following the Rolex Sydney Hobart Yacht Race, LCE Showtime under the charge of Mr R Buchannan, departed Hobart at 0930 on the 2nd January 2020 with a crew of six others for Sydney. At about 0230 on 5 January off the New South Wales (NSW) Coast LCE Showtime lost her keel. At about 0530 that morning all crew were rescued by the NSW Water Police vessel and transferred to Port Kembla.

Australian Sailing issued the Terms of Reference on 18th February 2020 for the review of the loss of the keel from LCE Showtime. The following is a summary of the full review which is not being released for public perusal.

Review Summary

1 LCE Showtime was purchased by Mark Griffiths and Campbell Letchford in 2016 who immediately began a modification program to improve the boat's performance.

2 In 2017 Dovell Naval Architects were engaged to design a new keel. The plan was approved by DNV GL Germany in 2017 with Letchford Engineering providing the engineering specifications to support the plan and engaged to manufacture and install the keel. Mr Letchford signed the plan approval certificate as the keel manufacturer.

3 LCE Showtime entered the 2019 Cruising Yacht Club of Australia (CYCA) Blue Water Series (BWS) which included the Bird Island Race and the Rolex Sydney Hobart Yacht Race (RSHYR).

4 LCE Showtime was a competitor in the 2019 BWS race to Bird Island on 30th November 2019 before the RSHYR on 26th December. The yacht hit a submerged object on the passage north from Sydney on the first evening of the race when in the vicinity of Terrigal. The yacht reduced speed from 20 knots to 5 knots in about two boat lengths. After some discussion between the owner Mr Griffith and crew it was decided to return to Pittwater and carry out appropriate inspections of the hull/keel. The cause of the underwater collision was not identified.

5 The yacht was docked at the Royal Prince Alfred Yacht Club (RPAYC). An inspection was conducted by an independent qualified shipwright. The report provided to the CYCA as the Organising Authority for RSHYR indicated a visual inspection which revealed no visible substantial damage. This document meets the AS requirements set out at SR 3.03. Mr Griffith advised that he had also inspected the keel and agreed with the shipwright's assessment. There was no involvement of a naval architect nor engineer in the inspection. Non-destructive testing e.g. x-rays, ultrasound or fluorescent-electric magnetic testing technique was not conducted on the welds. .

6 LCE Showtime competed in the RSHYR and there were no significant issues that were mentioned to the review team during the race south to Hobart.

7 LCE Showtime sailed from Hobart in good weather conditions about one hour after the final member of the delivery crew arrived dockside at 0930 2 January 2020. There was a limited safety briefing provided as the yacht departed which, as far as can be determined from

discussions with the crew, did not include a briefing on man overboard procedures, details of the location of safety equipment and its functionality. Crew members spoken to indicated that there was no grab bag as recommended by SR 4.20. Assignment of PLB's (Personal Locator Beacons) of which there were not enough on board for each crew person, was not undertaken formally and nor did the registered owner of the PLB reflect the current user. No changes were registered with the Australian Maritime Safety Authority (AMSA).

8 There was no passage plan or communications schedule provided to Tas Maritime Radio (TMR) or Marine Rescue NSW but rather an ad hoc arrangement for the skipper to keep the owner Mr Griffith informed by telephone.

9 The crew for the return passage to Sydney were seven in number and included two from the race and all except one had completed Australian Sailing's SSSC training or the equivalent. The crew was divided into two watches.

10 It is important to fully understand that yachts returning from races such as the RSHYR are totally responsible for the planning and execution of their return passage. This activity is entirely independent of the Organising Authority. The CYCA made this clear in the pre-race briefing. Therefore, it is reasonable to state that the AS SR's in these circumstances are only for guidance and not mandatory.

11 The passage north along the Tasmanian east coast was characterised by an increasing northerly air stream which increased as the yacht approached Bass Strait. The early passage included periods under motor when the breeze dropped out. As the yacht entered Bass Strait the sea conditions were characterised by a three metre swell, adverse current, strong winds knockdowns, difficult steering, and slamming. The wind shifted to the south early on 4 January and increased to 40 knots with stronger gusts, making it more challenging for the helmsman and unpleasant for on watch crew.

12 The passage from Tasman Island to Gabo Island included challenging conditions in strong north easterly wind with a reefed mainsail and a small headsail. There was a three metre swell and deteriorating sea conditions as the yacht approached Bass Strait which further deteriorated as the wind changed to the south as the yacht closed the NSW Coast.

13 The skipper had throughout the passage so far paid very close attention to the keel bolts. Towards Gabo Island it was noticed that two bolts had fallen out of the keel support structure fastening it to the rib aft of the keel and disappeared into the bilge area presumably and could not be found by the skipper Mr Buchanan. A third bolt had worked its way loose, but due to the significant loads on the keel support structure this bolt could not be re-fastened and was left out.

14 It should be noted that some of the crew were concerned and stated that they thought the boat was likely to break up and that they should seek shelter. The skipper decided to call the owner with a view to taking shelter if possible. The skipper, in discussion with owner decided to continue.

15 The crew reported that steering was difficult as the boat proceeded further north and the effect of the east coast current, mixed with the current in Bass Strait further contributed to the difficult sea conditions. The yacht was knocked down a number of times and the review team formed a view that the further the boat progressed north the more difficult managing the yacht became.

16 It should be noted that the crew commented that on 4/5 January the NSW bushfires in the vicinity of Eden were extreme and the smoke was making visibility very poor by day, which required navigation lights by 1500, and even worse at night. The yacht experienced severe slamming to very severe slamming as it crossed Bass Strait and proceeded north. Off Eden the auto pilot failed.

17 The yacht was very noisy below in the prevailing conditions. This presented the crew below off watch with a very challenging scenario and not one conducive to continuing their ocean return passage to Sydney.

18 At about 0230 5 January the yacht was again knocked down, there was a loud metallic 'TINK', the boat rolled to 90 degrees, the keel broke clear from the yacht and the hull inverted with the three people on deck now in the water and four trapped in the upturned cabin..

19 Three crew members were washed overboard but secured to the jackstays by their tethers attached to PFDs. As the boat was turned over the helmsman's collar bone was broken and during their time in the water another crew member was knocked out when struck on the head by the hull. The helmsman had to dive under the hull to release his tether from the centre jackstay. To stay with the hull they stood on the lifelines whist holding the jackstays. This was made more difficult due to a broken stanchion adjacent to the wheel.

20 The skipper and three crew were below, the skipper with his previous military special forces background and training instilled calm and developed a safe and very appropriate plan to evacuate all crew members. This included sending a Mayday from the VHF and activating the EPIRB. Those below cleared the floating debris from their immediate area and developed the escape plan.

21 The four trapped crew executed the escape plan and all joined their colleagues in the vicinity of the upturned cockpit. The life raft was still secured to yacht in the vicinity of the backstay and stern lifelines. One crew person removed their PFD and was able to swim down and cut the raft free to float to the surface before being inflated. The task of cutting the raft free was made more difficult by the presence of fuel caddies that were secured in the same area as the raft.

22 Whilst in the water those crew with PLB's attempted to activate them but found this to be very difficult in the rough sea conditions whilst trying to remain connected to the hull and still not being injured by being struck against the hull. Both GME and Rescue Me PLB's were found to be impossible to operate with one hand and difficult to hold with the other as the PLB flotation jacket required removal to activate. Some PLBs were lost and sank.

23 At about 0330 the crew were all in the life raft, the skipper had emergency contact available on his mobile phone which enabled him to pass his situation and GPS position from a crew person's GPS watch to the emergency number. The life raft was extremely unpleasant in the conditions about 15 NM ESE of Bermagui but the crew had one loaned PLB not registered to any of the current crew that was activated. The lack of a grab bag limited the options for the crew but AMSA had received their mayday and had an aircraft in the area to support the rescue by the NSW Water Police. At about 0530 that morning the crew were taken to Port Kembla

24 The crew who spoke with the review team made some further observations about safety equipment.

a. The LCE Showtime crew were fortunate to have manual inflating lifejackets. This was particularly pertinent for those who were required to evacuate from the upturned hull.
b. Tethers without quick release clips caused difficulties when under pressure for those in the water in the very difficult sea conditions that prevailed.
c. Crew members also noted that there were insufficient PLB's for each crew member to have a dedicated PLB, and this resulted in those on deck at night not always wearing a PLB.

25 One crew person had post rescue psychological issues resulting from this incident and took up the offer of counselling support from the CYCA.

26 The hull of the yacht was recovered and taken to Lakes Entrance in Victoria by the insurance company. An independent engineering review of the loss of the keel has recently been completed but the findings have not been seen by the review team.

The report makes certain recommendations to Australian Sailing which are listed with the National Safety Committee's response to each on the following page.

Recommendations

Item	Recommendation from the LCE Showtime Review	Australian Sailing Response
A	AS SR's be revised to mandate compliance with ISO12215 and AS1554 for keels for categories 1 – 7 as boat owners change and yachts compete in different race categories	The Special Regulations that are applicable to this recommendation come from World Sailing. Increasing the requirement that keels for categories other than 1 and 2 comply with ISO 12215 is a matter for World Sailing to consider. Australian Sailing will bring this recommendation to World Sailing's attention.
B	Plan approval submitted by the naval architect and engineer for welded keels should include finite element analysis, slamming allowance, fatigue life of welded keels, strength of hull and keel support frames and an assessment of keel life for plan review by an accredited body under World Sailing Plan Approval process	Yacht design takes place in an international context. Plan Review is a process put in place by World Sailing in consultation with Notified Bodies. Including these aspects of keel design into that process is a matter for World Sailing to consider. Australian Sailing will bring this recommendation to the attention of World Sailing.
C	Assessment of welding practices and inspections of welding and final installation inspection by an independent authority be formalised by AS	Manufacturing of racing yachts takes place in an international context. Boat manufacturing, inspection of keel welding and final installation relates to the In Build Validation project recently considered by World Sailing. Australian Sailing will bring this recommendation to the attention of World Sailing.
D	AS to be responsible for sighting plans for keel and other underwater structures before they are submitted for approval and maintaining records after completion, so as to track changes before final plan approval	The recommendation is outside the remit of Australian Sailing's role of a National Sport Organisation and Member National Authority of World Sailing. The administration of any yacht's design plans and records are a matter for the design office and boat owner. No action will be taken on this recommendation.
E	AS recommend to the coastal authorities, procedures for yachts on independent passages to and from races to submit passage and communications plans	The issue of incidents during delivery trips is a sincere concern to Australian Sailing. The intentions of this recommendation are agreed and addressed through a Safety Information Notice for boat owners and delivery crews.
F	Welded keels on yachts to be inspected by a suitably qualified engineer at intervals of not more than 12 months and the report forwarded to both AS and appropriate OA's. Inspection is to include non-destructive testing of welds and an assessment of corrosion especially for welds	This recommendation is agreed in principle. Australian Sailing has already been working on this by way of the Safety Information Notice on Surveys and Keel Inspections issued in 2015 and the contributions to World Sailing's Offshore Special Regulation on the same. Australian Sailing has also issued an Amendment to the Special Regulations that requires periodic and post grounding/underwater collision inspection of keels and rudders for Category 1 and 2 races and accompanied this with a Safety Information Notice and

		inspection form. The position being taken is consistent with World Sailing's policy and Offshore Special Regulations.
G	Yachts that ground or are involved in an underwater collision be slipped and examined by a naval architect and an engineer	This recommendation is agreed in principle and AS will address through the same Amendment in response to recommendation F.
H	AS National Safety Committee to investigate the shortcomings noted with PLB's, quick release clips and safety harnesses in this report	Australian Sailing will refer this recommendation to a working party of subject matter experts to determine what specific recommendations could be made in response to the noted shortcomings.
I	AS amend SR 4.20 grab bags from recommended to mandated	Australian Sailing will refer this recommendation to mandate safety grab bags to boat owners for comment before determining its response.
J	AS further action the Coroner's 2005 Report on the loss of life on Excalibur	The recommendations of the Coroner's report on Excalibur that are directed to the sport of sailing have already been largely adopted. Recommendation 7 which addresses certification systems for racing yachts and independent assessment of compliance with prescribed design and building standards is subject to an international context. Boat manufacturing, inspection of keel welding and final installation relates to the In Build Validation project recently considered by World Sailing. Australian Sailing will bring this recommendation to the attention of World Sailing.
K	Changes to World Sailing documents to track keel/rudder change history noting the original and subsequent designer and inspection reports for compliance to plan approval.	World Sailing have already acknowledged the need to address this. No action will be taken on this recommendation.