Incident Reports

A summary of reports of known Offshore-related incidents that have occurred since the last meeting.

#	Race / Location	Yacht	LOA	Type	Incident	Outcome
1	Transat Jacques Vabre	Hugo Boss	60’	Mono	Collision	Keel cut away - Boat ok
2	Azores BRA-FRA delivery	Pinocchio	40’	Mono	Capsize	Swamped - Abandoned
3	Hobart-Sydney delivery	Showtime	40’	Mono	Keel Lost	Crew recovered
4	Delivery trip	Gamin	50’	Tri	Beam Failure	Towed to harbour

1. Transat Jacques Vabre - Hugo Boss – IMOCA 60- Collision with unidentified object

3 November 2019 ‘Hugo Boss’ was travelling at 21 knots and collided with an unidentified object. Keel damaged and cut away, boat made a port safely. See attached report.

2. Return from Transat Jacques Vabre - Pinocchio – Class 40’ monohull – capsize – abandoned

17/18 December 2019 rolled by a wave, swamped and structural damage. Abandoned, both crew rescued. See attached account.

3. Return from Sydney-Hobart – Ker 40 Showtime

5 January 2020 keel broke off, boat capsized. Seven crew rescued after 3 hours in liferaft. See attached Australian Sailing Terms of Reference – Independent Review into the loss of ‘LCE Showtime’ and rescue of its crew.

4. Delivery trip – off The Scillies, GBR – Gamin 50ft tri crossbeam failure

8 July 2020 ‘Gamin’ a 1990 wooden trimaran broke its starboard crossbeam and dismasted 40 miles off the Scillies. The two crew were taken off by the St Mary’s lifeboat. The boat was subsequently towed to L’aber wrach(FRA).

ALEX THOMSON

RACING

IMOCA HUGO BOSS TJV KEEL GROUNDING REPORT

On the 3rd November 2020 whilst completing the Transat Jaques Vabre the IMOCA Hugo Boss had a collision with an unidentified object. The purpose of this report is to outline the incident and damage incurred. Alex Thomson Racing wishes to commutate to the Skippers and IMOCA what we have learnt from the accident; what measures we have taken to reinforce our own boat and what recommendations we would make for the betterment of the class and the safety of the skippers in the future.

YACHTS CONDITION PRIOR TO THE INCIDENT

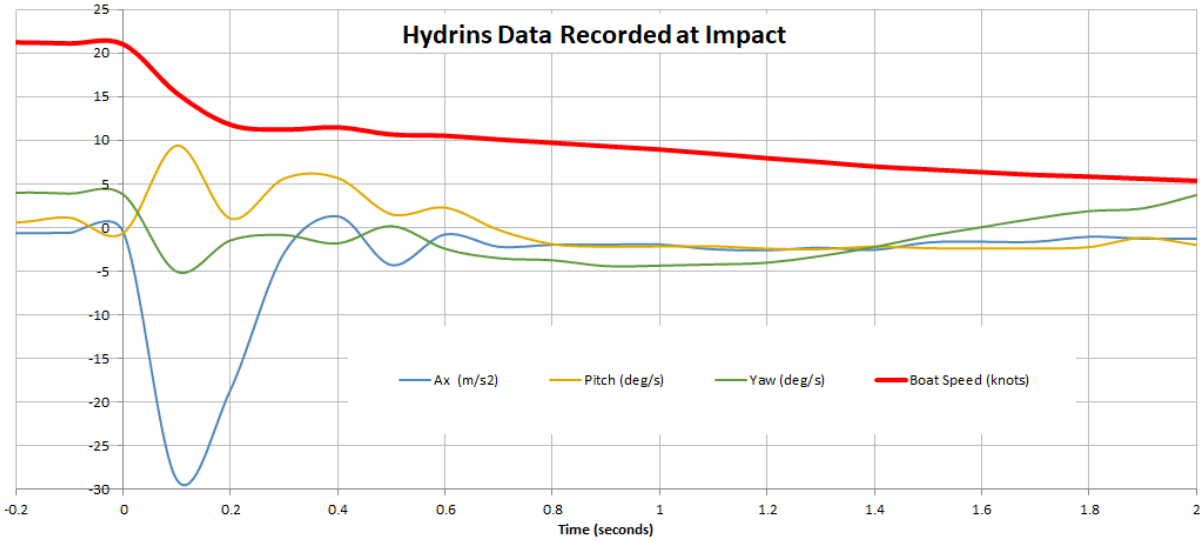
- Boat Speed : 21.0 kts
- Heel Angle : 12.3 deg
- Keel Cant Angle: 12.0 deg
- Trim Angle : 2.7 deg (bow up)
- AWA : 40 deg (port tack)
- TWS : 15 -16 kts
- Sail Configuration: Full main JT and J3

RECORDED DURING THE INCIDENT

During the incident the on-board Hydrins recorded a maximum negative acceleration of 28.9 m/s^2

The boats speed dropped from 21.0 to 11.8knots in period 0.2 seconds; before slowing down to 2 knots over the next 2.7 seconds.

The boat can be seen to pitch bow down and yaw to port as a response to the impact.



SKIPPERS ACCOUNT OF THE INCIDENT

The Skippers, Alex Thomson and Neal Macdonald were both on watch. The conditions were good, sea state was slight and visibility was good.

The impact was severe; Alex was thrown from his position behind the pedestal to the front of the cockpit and Neal, braced in the companionway at the back of the cockpit, hit the aft cockpit bulkhead hard.

Both skippers were very lucky to be uninjured during the incident, it was fortunate that both skippers were inside the boat and that within the small cockpit on-board Hugo Boss there was not far to fall during the impact.

STABILISING THE BOAT

An initial assessment of the boat showed that the keel had become detached from the hanging plates and was hanging below the hull from the main hydraulic ram. This was exactly the same scenario as Kito De Pevant during the 2012 Vendee Globe race (video here https://www.youtube.com/watch?v=3_Wa7paXxVc).

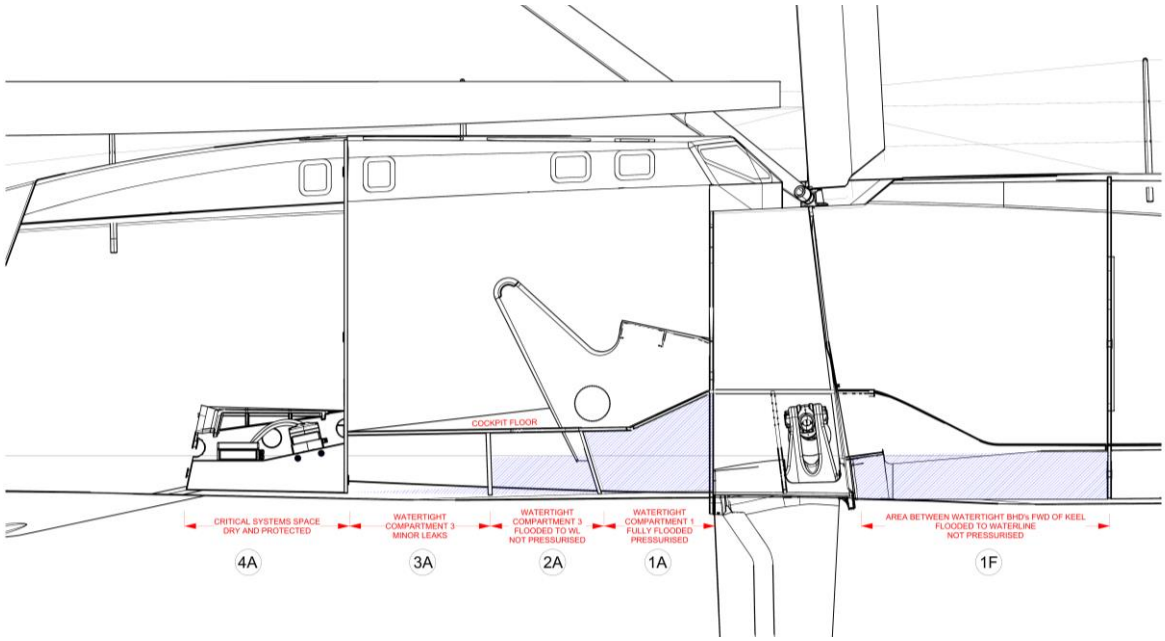
The keel was able to swing and spin and it was impossible to stabilise. The only option was to cut the hydraulic ram and free the keel in order to prevent further damage to the hull and be able to make for a safe port.

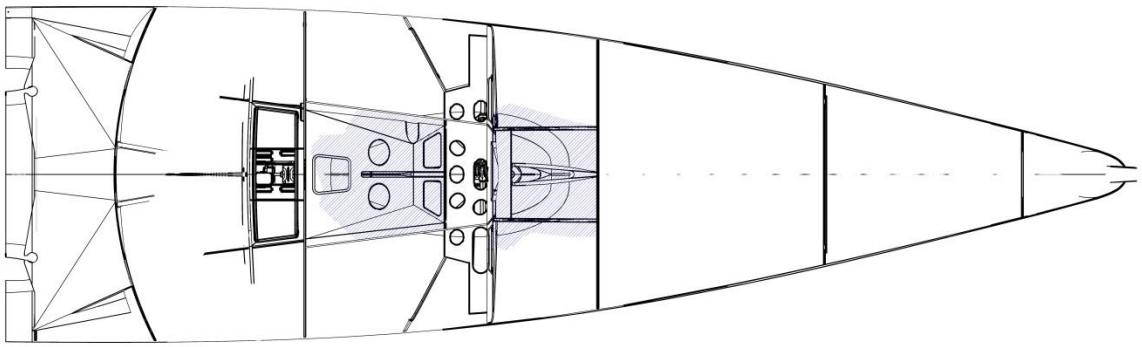
The boat carried a cordless grinder and thin metal cutting discs. It was only possible to cut half way thru the ram shaft before the grinder ran out of cutting depth. The cutting process was slow as the grinding discs became lubricated by oil within the hollow of the ram. Access was also a limiting factor.

The ram eventually snapped and the keel detached whilst the skippers were taking a break from their attempts to cut it free.

FLOODING

The aft keel bearing is under the forward part of the cockpit. As you can see below there are three watertight compartments under the cockpit which prevented any water getting into the critical systems. This design was to support the cockpit floor not specifically make a water tight box around the keel. Undoubtedly this saved the boat from being abandoned.





1 Fwd Flooded to waterline, but not pressurised. Easily managed and not a concern to skippers. Watertight doors closed at each end of compartment.

1 Aft Fully flooded compartment, pressurised when underway. Contained between cockpit sides and cockpit floor.

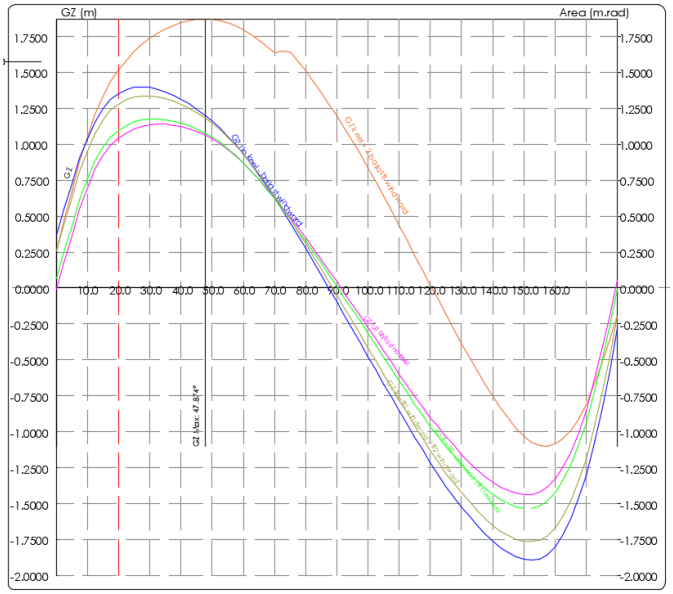
2 Aft Flooded to waterline, but not pressurised. Contained between cockpit sides and cockpit floor

3 Aft Minor leaks through penetrations, Contained between cockpit sides and floor.

4 Aft Systems Space – Housing motor, batteries, keel pump and most electrical systems. Completely dry and well protected during incident.

SAILING A FOILING IMOCA WITHOUT A KEEL

Hugo Boss is the first foiling generation boat to attempt to sail without a keel. Without heeling and getting the foil into the water, the boat just slipped sideways and lost steerage. By experimentation it was found that at least 10 degrees of heel was needed to get the foil in the water and gain some lateral resistance. Feedback from the skippers is that it is very unlikely in even the most favourable conditions the boat would have been able to sail any closer to the wind than 75deg TWA.

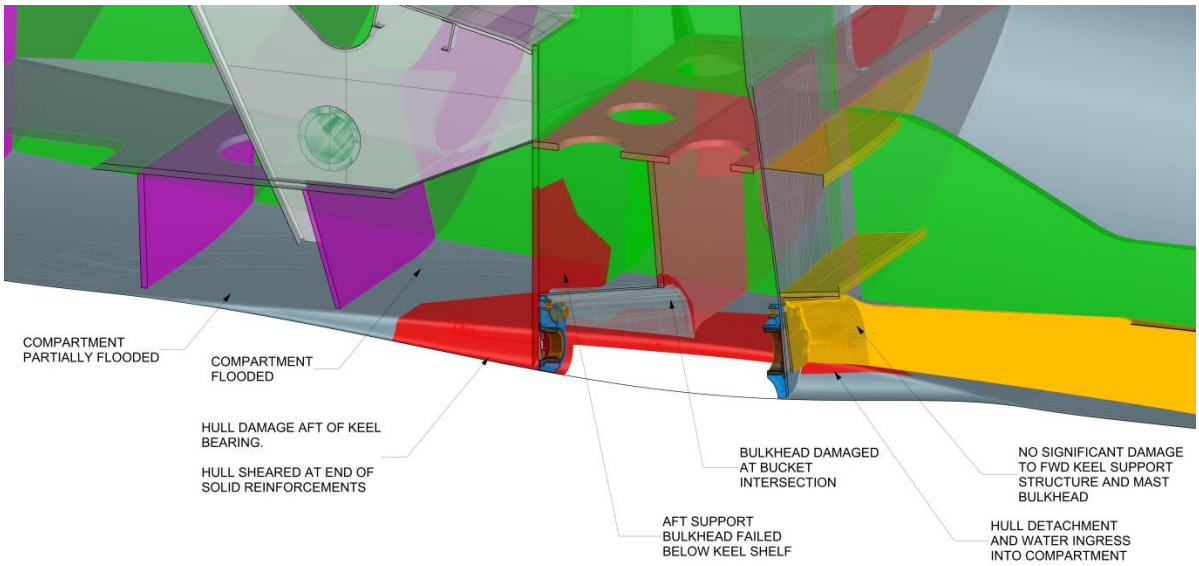


Left: Degraded Stability Curve for Hugo Boss after the incident.
Above: Additional measures for stability using an inflatable fender stored on-board.

The ballast tanks were filled to gain stability but both the mid tanks were damaged at the forward end where they drained into the keel area and were constantly emptying.

The Skippers felt the boat vulnerable to capsize and so inflated a large fender that was secured under the deck spreader to help with any large amounts of heel.

ASSESSMENT OF THE DAMAGE



AFT STRUCTURE FAILURE

Inspection of the damage showed that the aft supporting structure had failed allowing the aft keel bearing to move aft and the keel to then become detached and drop out of the hull.

The aft support bulkhead failed under keel shelf. The aft bulkhead failed mid-panel as a consequence of the rest of the keel support structure failing and moving aft.

The keel bucket (a monolithic moulding over the aft half of the keel) de-bonded from the hull and moved aft with the keel bearing; this prevented the impact force from being shared into the hull skin and connected forward structure.

There was no observable significant damage to the keel bolts or keel bearings. The aft bearing remained attached to the keel bulkhead, bucket, and hull reinforcement assembly and the whole section moved aft, detaching from the surrounding structure as a unit.

There was very little damage to any structure forward of the keel. The mast bulkhead, forward keel bucket and support shelves showed no damage after NDT inspection.

ANALYSIS OF THE DAMAGE

To understand the observed damage Gurit applied augmented load cases to a detailed FEA model of the keel structure. Gurit studied a range of impact scenarios in-order to find a situation that best matched the pattern of structural damage seen on the boat.

The final conclusion of this study is that the most likely cause of the damage to HB7 was from an upper grounding impact and that that a large force applied at -0.5m from the keel axis would produce damage consistent with what was observed.

An upper grounding scenario is not covered by the ISO design criteria and so the keel structure had not been specifically analysed for this condition during the structural design. Sustaining an impact high up the keel fin puts different stresses into the keel structure than that of the forces from a conventional lower grounding case.

ACTIONS TAKEN BY ALEX THOMSON RACING

An IMOCA 60 with the hull breached and the keel hanging from the hydraulic ram is incredibly vulnerable and is likely to be abandoned. Our team felt that this was an untenable situation and as far as possible the keel should never become detached from the hull.

The keel grounding incident caused ATR to consider the suitability of all ISO keel grounding design criteria.

The brief for the new keel structure was to address the following:

- Increase the lower grounding load case
- Increase the canted grounding load case
- Add an upper grounding case based on circumstance derived from the TJV incident.
- Make considerations with the new structural arrangement to prevent the two keel bearings separating and allow the keel to fall out.
- Where possible build in structural redundancy

DEFINING A NEW LOWER GROUNDING CASE

In order to define the new load case the team needed a way to establish a design target. We did not consider it acceptable to simply define a new higher arbitrary target.

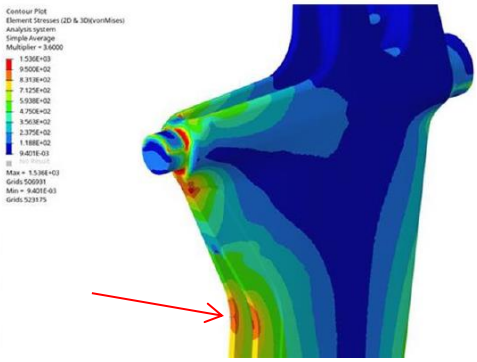
As a starting point Gurit were asked to perform an FEA study to understand how the one design keel may perform in grounding. Gurit also reviewed the bearing, keel bolts and keel pins. The aim of these investigations was to complete the loop and see if we could use the structural performance of the keel fin as a basis for defining the composite structure.

This methodology would create a structural hierarchy for the keel structure that was similar to the accepted design practice for other critical structural elements like the rig.

Appendage/Rigging (lowest SF) → Mechanical Attachment → Composite Structure (Highest SF)

STRUCTURAL HIERARCHY

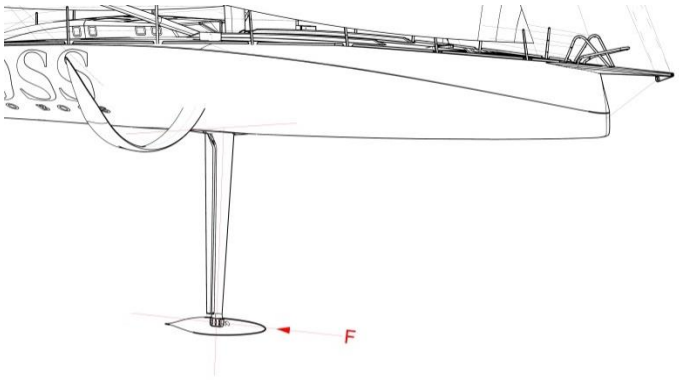
Composite - ISO Rule lower grounding	**3.60g**	**86%**
Keel bearing (Yield)	3.74g	89%
Keel Fin Yield	4.20g	100%
Keel Bearing bolts (ULT)	5.23g	125%
Composite – New Structure Target	**6.4g**	**150%**
Keel pin (pure shear)	9.27g	221%



The study showed that in a lower grounding incident the keel fin would begin to yield at a load equivalent 4.2g. This means that an IMOCA designed to the current ISO rule would have the composite fail before the keel fin.

In conference with Gurit the team decided it was reasonable *and achievable* to define a new lower grounding case for the composite that exceeds 150% of the yield strength of the keel.

This established a structural hierarchy that the team were more comfortable with where the structural performance of the supplied one design keel was used as a basis for designing a suitable composite structure.



LOWER GROUNDING CASE

ISO Load Case: 289Kn (3.6g)

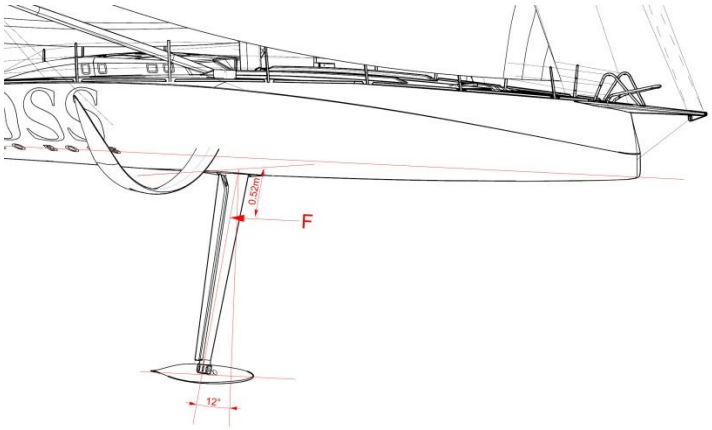
Increased Load Case: 506Kn (6.4g)
Applied to the bulb with the keel on centreline.

DEFINING AN UPPER GROUNDING CASE

After completing the keel study and establishing the new lower grounding target the design team's attention turned to addressing the upper grounding case observed during the TJV incident. Unlike the lower grounding case where a moment is applied to the keel fin causing a yield point during an upper grounding event the keel fin works mainly in shear.

The team did not consider it reasonable or achievable within the current boat to increase the strength of the structure to be greater than the shear capability of the keel (this would have been greater than 10g). Instead the target was defined to ensure that if the new structure was to sustain the same impact again that it would survive.

From Gurit's analysis the maximum hypothesized load for the incident was 1000kN, applied at 0.52m below the keel. Therefore this would be used as a benchmark to test the new structure against. ATR were keen to test the structure at realistic keel cant angles, so this load was applied with the keel canted to 12 degrees.



UPPER GROUNDING CASE

No ISO Design Equivalent
New Load Case: 1000kN
Applied at – 0.52m below keel axis and 12 degrees of keel cant.

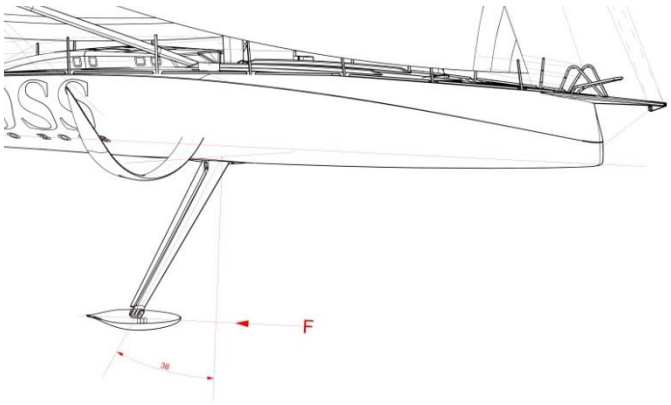
DEFINING A NEW MAXIMUM CANT LOAD CASE

Gurit and VPLP define a canted load case for their IMOCA's **however there is no class or ISO equivalent**. The canted load case is lower than the ISO lower grounding case because in a grounding incident the boats are assumed to initiate a yawing rotation around the keel, absorbing some of the energy of the impact.

However when the keel is canted the boats are also sailing at their fastest, so although ATR accept some of the energy of an impact is absorbed in yaw we were keen to see an increase in this load case.

The new structure designed to sustain the upper and lower grounding cases was tested against the maximum cant case and shown to be able to maintain 318kN (3.56g); an increase of 42%.

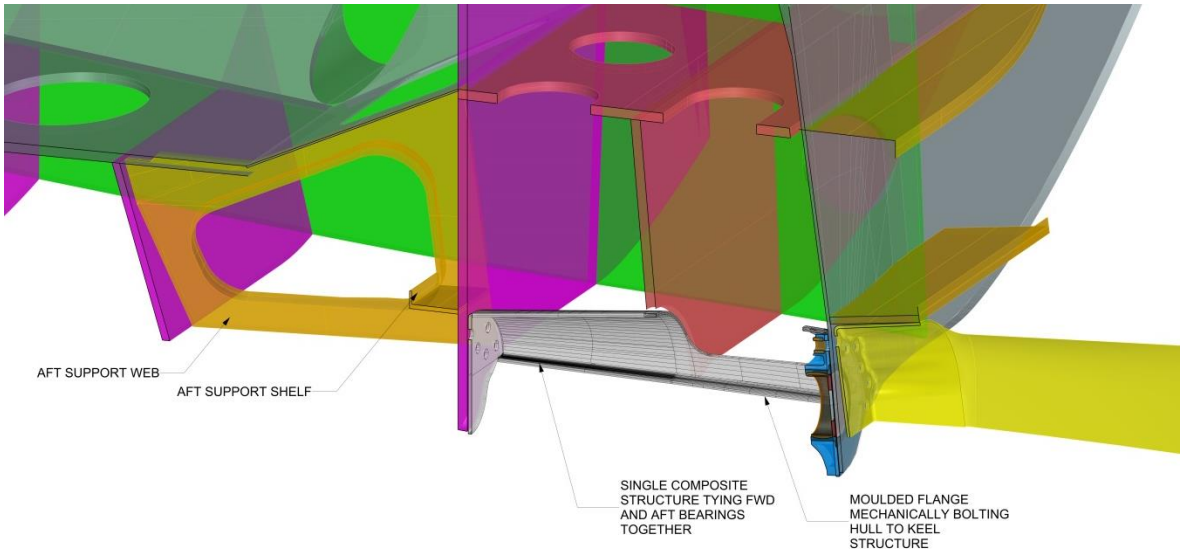
Within the limitations of the current boats structure the team considered that this was a satisfactory new load case to have achieved.



MAXIMUM CANT GROUNDING

Original Structure Ultimate Load: 2.5g
Increased Load: 318kN (3.56g)

NEW KEEL STRUCTURE ARRANGEMENT



SINGLE COMPOSITE STRUCTURE TYING KEEL BEARINGS TOGETHER

To prevent the keel bearings being able to separate a single monolithic bucket moulding has been designed that wraps and encapsulates both bearings. This moulding is mechanically bolted to the hull skin using the keel fairing bolts to add additional redundancy to the bonding.

AFT STRUCTURE SUPPORT WEBS

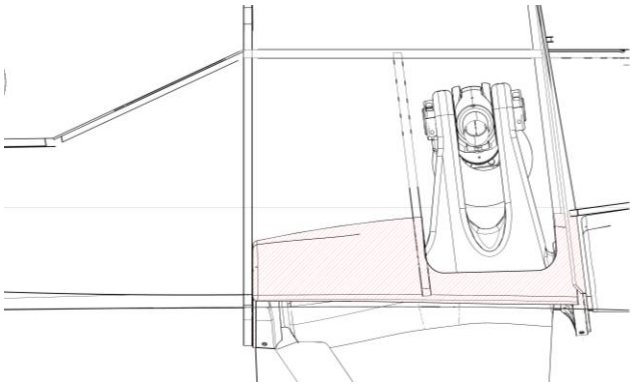
To better support the aft keel bulkhead new support structure has been added aft of the bulkhead. These webs dissipate the load over a larger hull area.

INCREASED SIZE OF THE AFT HULL C PLATES

It was observed that the hull failed aft of the c-plate assembly. These c-plates were increased in length and size to dissipate the load more efficiently into the hull skin.

GENERAL REINFORCMENTS

To sustain the increased grounding load cases additional laminate plies were added to the mast bulkhead, aft keel bulkhead, cockpit longitudinals and keel shelf.



Drawing showing the single monolithic composite moulding wrapping both bearing to prevent separation in a grounding event

WEIGHT OF THE REPAIR

The total additional weight for the WHOLE repair including panel joints and hull fairing came to **65Kgs**.

If the original yacht structure had been designed to the higher structural targets defined for the repair this could have been achieved in under **50Kgs**.

WHAT DID WE LEARN?

ATR have learned a lot about the keel structure of the IMOCA's and the ISO rules.

It is our conclusion that the ISO rule/current keel load cases for IMOCA and in fact for any fast offshore monohull are **NOT** safe. If IMOCA does not do something to deal with this, more boats **WILL** be abandoned and Skippers lives will be at risk.

Given the constraints around as-built structures we have split our recommended actions into SHORT TERM and LONG TERM. The SHORT TERM actions will reduce the risk of a catastrophic loss and hopefully stop Skippers having to abandon their boats.

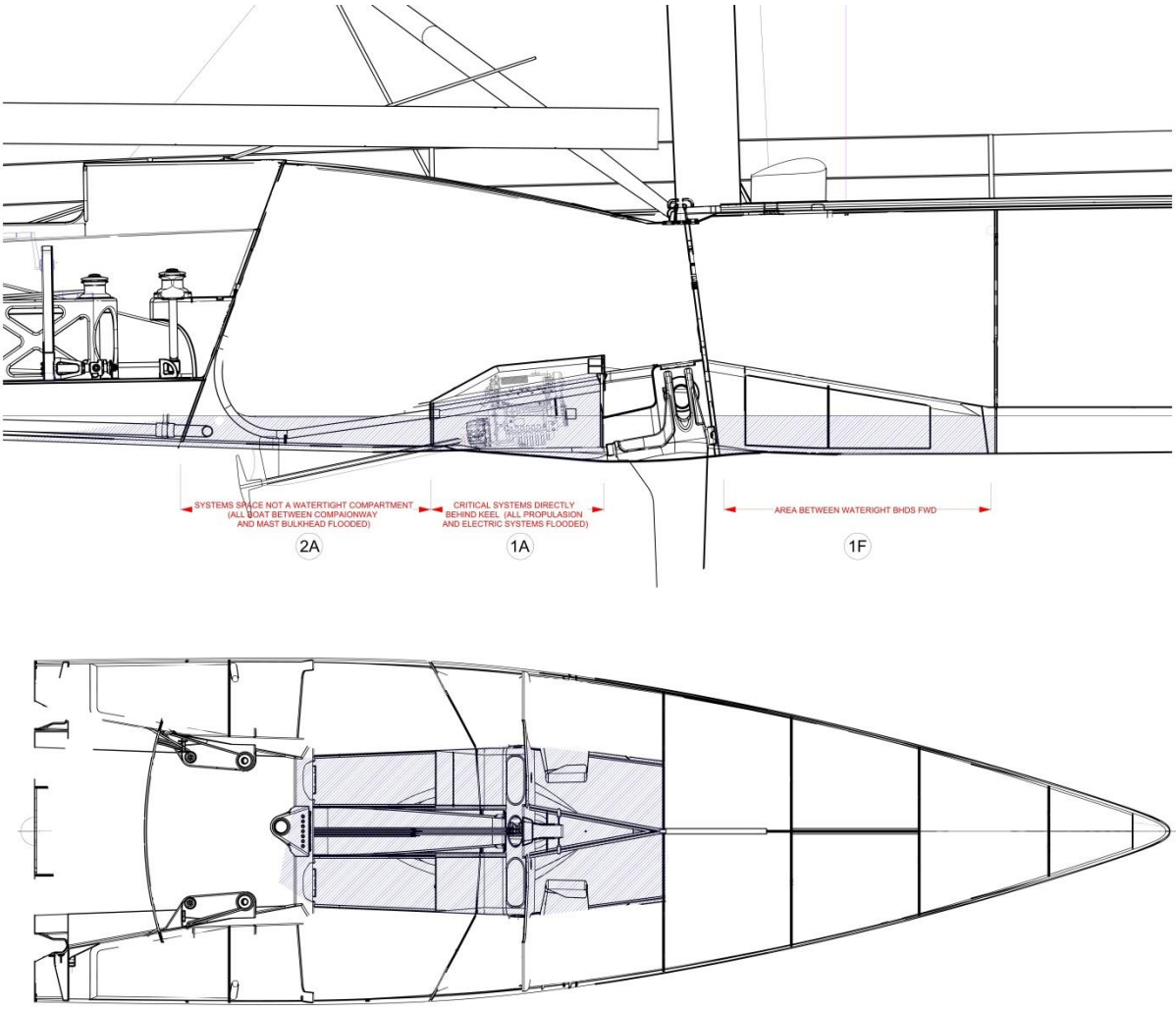
SHORT TERM ACTIONS TO MAKE THE IMOCA'S SAFE

These are actions that we would ask the class to consider implementing immediately and before the VG.

REDUCE RISK OF FLOODING ESSENTIAL SYSTEMS

ATR strongly recommend that the Class make it mandatory for IMOCA's to have a watertight compartment surrounding the aft keel bearing and crash structure to protect the boat and sytems from flooding in a grounding incident.

Below is the HB6 layout. The same incident on this boat would have flooded the main compartment including the electronics, engine and batteries. **Almost certainly we would have abandoned the boat. Most IMOCA 60's have a similar layout to HB6.**



1 Fwd Floored to waterline, but not pressurised.

1 Aft Systems space, all electronics and engine fully flooded and pressurised when under way.

2 Aft Water from systems space will flood over ring frame under pressure and flood cabin

METHOD TO RELEASE THE KEEL RAM

If HB7 had not been carrying a cordless grinder and metal cutting discs it would have not been possible to cut the hydraulic ram and free the keel. Should the keel have remained hanging from the ram it is highly likely the hull damage would have continued to worsen and it may not have been possible to stabilise the boat.

With immediate effect ATR would recommend teams carry a means to be able cut the keel ram, even when training. We will be carrying an 18v grinder and 180mm metal cutting discs to ensure we are better prepared to cut the ram if a similar event occurred again.

ATR would then strongly recommend that this issue is referred to Hydroem to devise the most suitable way to release or cut the ram shaft and that this solution is then made mandatory once it has been defined.

BUOYANCY BAGS

The skippers on board HB7 were able to inflate a large fender and rig it to the deck spreader to give them an increased stability and reduce the risk of capsize. The fender was large enough to have slowed the roll rate and give the skippers longer to react if the boat began to heel too far.

The class should consider the design of a mandatory device that would be a more effective solution.

LONG TERM RECOMMENDATIONS

ATR ask the IMOCA Class association to consider a complete re-evaluation of the IMOCA one design keel package and associated rules governing the composite structure.

A REVIEW OF THE MAGNITUDE LOAD CASES

ATR have increased the structure of HB7 to be higher than the ISO grounding load cases. One of the new design targets was based upon the yield point of the keel fin, ensuring that during a grounding event the keel will begin to yield and absorb energy before the composite structure fails.

ATR recommend the Class complete a comprehensive grounding study on the keel fin, keel bolts and bearings. Similar to the study outlined in our report we recommend that the Class agree on a new structural hierarchy for the keel structure that is then used to define the new load cases.

CONSIDER ADDITIONAL LOAD CASES

ATR added an upper grounding load case that was based on maximum likely grounding impact from the TJV incident. This load case was applied with the keel canted to 12 degrees.

The class should implement the upper grounding load case 1000Kn @ -0.5m

The class should also consider a partially canted load cases (10-15 degrees) that is more representative of the condition of a new generation IMOCA when it is sailing its fastest.

REDESIGN OF THE KEEL PIN TO PREVENT KEEL BEARINGS BECOMING SEPARATED

ATR believe that the one design keel package should include a means to hold the forward and aft keel bearings together.

If the two bearings can be prevented from separating then the loads from a grounding impact will be more efficiently shared between the forward and aft keel structure. It will also make it much less likely that the keel can become detached from the composite structure.

The new HB7 composite structure has now been redesigned to tie the two bearing together using a composite solution. However a better solution for the class would be to have a mechanical method as part of the one design keel package this would mean all boats would be the same without compromising weight or safety factors in this area.

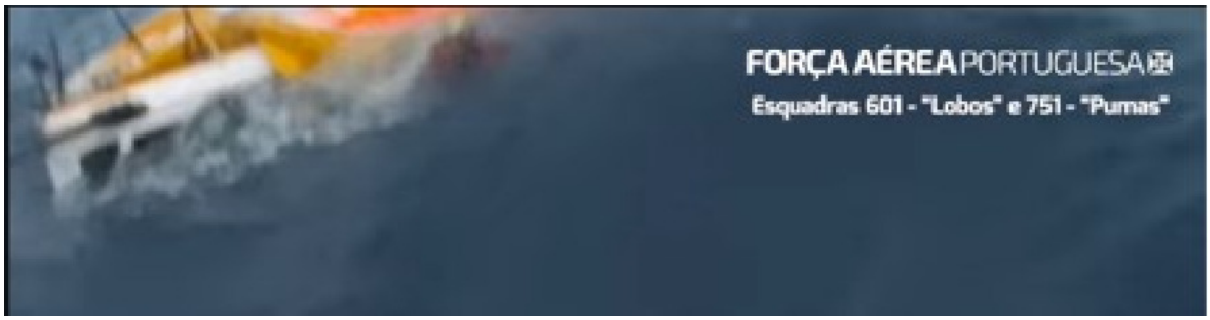
REVIEW LOADS AS SPEEDS INCREASE

IMOCA has rapidly developed in the last 5 years with enormous increases in speed. The speed has a direct impact on the accelerations we will experience in these types of incidents and therefore **as speeds increase the loadcases need to increase too.**

Return from Transat Jacques Vabre – 'Pinocchio' – Class 40'#150 monohull – capsize – abandoned

A translation of an account by Louis Duc posted on Facebook:

We left Salvador De Bahia on December 2 (Louis Duc in the company of Thomas Servignat, sailor, experienced athlete and technician at Gepeto Composite, the shipyard that built the boat), to bring the Class40 back to France following the Transat Jacques Vabre.



On board, as in the race, we had the necessary equipment to analyze and receive weather files, as well as a positioning system (Yellow Brick Tracking) set to one position every 4 hours to be followed by loved ones. down. For a fortnight, conditions were fairly mild, with a NE wind forcing us to shift into the western Atlantic. We were carefully following long-term weather developments to anticipate our trajectory as we approach the Azores, planning a stopover if necessary.

The weather forecast confirmed difficult conditions as we crossed the Azores for 24 hours, followed by a lull allowing us to reach France or Coruña before the next low, which was expected to be violent. The wind was established around 35 knots with gusts and lulls around 200 miles to the SW of the Azores. We were on our way to pass between Flores and Faial, because going further south was not an option given the changing weather and the deteriorating conditions in the eastern Azores.

We knew that we were going to have tough conditions with rough seas, we were going to cross the archipelago plateau with the rising seabed, critical zone, but I also knew that we were on a reliable boat, with a large righting moment, on which I had already suffered many times this kind of conditions, without ever having had the feeling of being at the limits of the boat's capacities. Otherwise, I wouldn't have hesitated to stop at the cape, which I have already had the opportunity

to do. During the night, the genoa tore, which caused us to change course to head towards Horta, in order to take shelter and repair. We had the staysail and the storm sail ready for use, so we decided to sail under 2 reefs and storm jb, so as to spend the night quiet and arrive the following evening. With the pilot's wind mode no longer usable (the blade had broken some time before), we were in compass mode on autopilot.

After an engine load cut at 4hTU I went to doze off at the back of the boat, on the sails, while Thomas was on standby near the chart table, the boat was accelerating in surf at 26 knots, then slowing down to 9 knots, the heels were reasonable and the situation was stable, the boat was doing well in the waves. Asleep with one eye, like all sailors, I felt an extremely violent heel: I understood that we were going.

We know that, in rough seas, downwind, speed being your safety, you have to sail faster than the waves to never be caught. In our case, the boat was a little under canvas and, in a phase with a little less wind, a too low wind angle with a heading followed by the autopilot without relaunching the acceleration (without aerial), a bigger wave , at the wrong time, got us on board.
The boat turned into a cork rolled by the breaking wave ... No wave before had given us an alert.

In the second that followed, the boat was flooded with water, I found myself snorkeling for about twenty seconds. Then the boat straightened up. I heard Thomas call me, everyone is still on board. During the capsize, Thomas was thrown forward onto the bulkheads, he was injured in the face, but able to!

From the water up to the knees which continues to rise in the living area, we quickly understand that we must trigger the help, we will not be able to return on our own.

The first instinct was to switch off the batteries to avoid the risk of fire. Time to search in the night for the EPIRB beacon, stored under the already submerged descent step, unhooked from its support. We retrieve the survival bag placed next to it, look at a glance for any survival suits that we cannot find, and we emerge on the foredeck, the only place still not submerged. On this boat, I was the one who made the choice of the locations and moored all the safety equipment, I am happy: no hesitation about the location and the mooring.

Thanks to the equipment controllers who can be a bit picky at the start of the races, for people who are sometimes a little unruly ...Under the advice of Thierry Dubois, the safety bag is not a survival container, but a backpack, which allows us to have our hands free and not to lose it! We trigger the distress beacon, the plexiglass on the front cover pops off, and the TPS bag falls into our arms, that's a nice gift! Thanks to Aurélien Ducroz for having had the good idea to put the 2 TPS in the same bag at the start of the Jacques Vabre transatlantic ...

We know that it is around 5 a.m. or 6 a.m. UT, only the deck at the front of the boat comes out of the water, probably thanks to the closed front crashbox, the transom is submerged the aft pushpits are under water, the escape hatch probably more than a meter underwater, the broken mast stuck to the transom, the spreader sticking out of the water, all this completely prevents access to the liferaft. A lot of debate around it, for this situation it was probably not the best location, but wherever it is, there will always be a situation where it is inaccessible.

In the safety briefings we attend during the departures of the major events, we are told never to leave the ship while it is still floating, our boats built in sandwich with compartments filled with unsinkable foam cannot sink, they are (almost) always spotted, even between two crests, this is what we repeated all day after ... hoping they are right ...

The Class40 Rule, which imposes unsinkability on us, is rather well done: thanks to this fundamental rule and to the Lombard group, architect of the boat who was not mistaken! On board a classic production boat, we probably wouldn't be here anymore.

In the waiting position, we imagine that we can be overflown and spotted in the morning and picked up later by a cargo ship or military vessel sent from the Azores. We are not the first to have this happen. In my head, I go over the episodes of every fortune of the sea that I know (there are a few) and I tell myself that there have been much worse, I think in particular of Raphael Dinelli and Thierry Dubois during the Vendée Globe 96 ', at Halvard Mabire during the Rum 94', there were a lot worse than us, the water is at 18 ° C, and we are in a survival suit.

The only problem is that we are not in the race and a concern gradually arises during the day: the possibility that the beacon does not work ...In my case, it is not the fear, but the anger that is born inside. How can we get there so quickly! We weren't on deck during the capsize, we are in a TPS suit, the beacon is triggered. We are not going to be fooled by a defective beacon! We will have confirmation a few hours later that the beacon had worked. The first distress signal was received by CROSS at 5:10 am UT and the beacon never stopped transmitting.

Putting relief in place under the conditions we are in is complicated, probably other rescue operations are underway, merchant ships are diverted to our position in the meantime. While we waited, I thought, several times, of going to the stern to try to free the raft, I thought if the boat were to go to the bottom, we would be sorry we didn't try. Thomas, more reasoned, would have stopped me: he was right. He was exemplary, he took part in his first transatlantic race and showed composure throughout, being injured in the face.

As night fell, a Portuguese Navy plane flew over us, as we began to envision a second night in the water. For us, that’s huge, they’re looking for us! I realize the importance of the many survival courses we attend on a regular basis, they are a huge help. We know the procedures, the contingencies, the mistakes not to be committed (there are others), I had the opportunity to redo my ISAF Course at the beginning of October at the CEPIM in Krach (even by copying the answers to Alexia BARRIER) we assimilate a lot of things!

A good half an hour later, a helicopter from the MRCC from Punta Delgada flew over us to recover us, we know that this is the most efficient means that could exist, we thought we were out of helicopter range. We just have to obey the diver's instructions. The rescuers were awesome! In 40 knots of wind and 8 meters of swell, they maneuver to the millimeter!

I don't know what to say to thank them. We were very lucky to have had recourse to them, they are trained to a very high level and agree to intervene at the edge of the zone in difficult conditions. After about twenty transatlantic races, I have already suffered some setbacks, but this is the first time that I have not been able to bring my boat back to port and that it is necessary to call for help.

Once again, it is thanks to the survival courses, the safety briefings, the equipment imposed on board by the OSRs checked at each start of the race, the CROSS Gris-Nez which received and transmitted our distress call and the MRCC of Punta Delgada, that we were picked up unharmed.

So a big thank you to all those speakers who have been well in the loop for years, often in the shadows, who allow us to start races, with all the elements to prepare our boats for our safety. I have a big thought for the group of relatives, organized by Catherine Ecarlat, who have been waiting for long hours without too much news. We apologize.

A huge thank you to Armando Castro, director of the Horta Marina, who acted as the link between the MRCC and our loved ones. Once again, he deployed mountains of energy and kindness to reassure, inform, participate in the logistics of our reception on land.

When we got out of the helicopter, we were picked up by Terceira Hospital where the team of carers was great with us. Supporting each other for 2 days couldn't have been easy! Thanks to Michaele who brought us his logistical support ...Thanks to Jérôme and Marc who, for several years, have been accompanying me in setting up projects, and once again on this operation spent a lot of time reassuring and organizing our return.

The question everyone is asking: and the boat?

The Class40 150 named Pinocchio was built by Gepeto Composite. Ironically, the story of the wooden man ends in a wooden crate in the belly of a sperm whale, off the Azores ...

The Class40 Pinocchio, wearing the colors of Crosscall Chamonix Mont-Blanc on the Transat Jacques Vabre, continues its navigation between two waters. We still have its position thanks to the internal battery of the Yellow Brick. So we are currently launching with my team, and in agreement with the insurance, an operation to recover the boat and thus ensure that it no longer represents a danger to navigation.

On December 31, part of the team was on the plane to Horta to collect the equipment on site and be ready to set sail on the evening of January 1 aboard a fishing boat, rearmed for the operation. We knew we had a decent weather window in front of us to go to the area, work there and come back at low speed.

Our positioning beacon, which, since the sinking, randomly sent positions up to 8 times per 24 hours on calm days (original setting), sent us a final position on December 31 at 8 a.m. For 24 hours, we hoped for a new position, when the conditions there would calm down, but nothing.

Nothing has been spotted -In the team, we had integrated Hervé Laurent, navigator and weather specialist with extensive experience in this type of situation, so that he could guide us on the weather slots and the organization of the operation. When he lost his position, he worked on the simulation of the trajectory to estimate the drift of the wreck.

The weather window for the day of January 2 was perfect for working. We make the decision, in agreement with the insurance company, to put the crew under sail on the evening of January 1st so that they can be on point estimated by Hervé Laurent as soon as daybreak the next day. The good

weather is with them, the visibility too. They spent the day criss-crossing this area over a 10 mile perimeter, without success.

But nothing has been spotted that could have come from the Class40.

A depression arrives on the area The next day, the weather deteriorates: a depression arrives in the area. There are too many uncertainties. We decide to abandon the search so that the team can be safely at the port before nightfall.

We lost track of the Class 40 150 Pinocchio.

Thanks to Jean-Philippe Joly, Amaury, Alan Roura, William for taking the time to lend us equipment. Thanks to Rom for arranging to come back from vacation to open the store. Thanks to the whole team who worked hard to make it happen! Thank you to the Azoreans who, once again, showed immense kindness. "

_____

Australian Sailing Terms of Reference: Independent Review into the loss of LCE Showtime and Rescue of its Crew

Australian Sailing Limited
ABN 26 602 997 562

Level 1, 22 Atchison Street
St Leonards NSW 2065

Locked Bag 806
Milsons Point NSW 1565
Australia

T +61 2 8424 7400
E office@sailing.org.au
W www.sailing.org.au

Preamble

After completing the CYCA's 2019 Sydney Hobart Yacht Race, race entrant *LCE Showtime* was being delivered back to Sydney when on 5 January 2020 at 0230 hours the keel was lost, and the crew activated its emergency beacon. The NSW police service responded to the incident and all crew were rescued.

Australian Sailing has determined to conduct a review to provide a report on the factual happenings in respect of the incident. The National Safety Committee has resolved the Independent Review (**Review**) would be conducted based on these Terms of Reference.

Constitution and administrative matters

The Review is constituted by resolution of the National Safety Committee and has invited the following to conduct the review:

Tim Cox (chair)
Chris Zonca
Frank Walker

Australian Sailing will provide administrative support as required. The costs and expenses of the Review will be borne by Australian Sailing.

Terms of Reference

The Review will examine all the circumstances pertaining to the loss of *LCE Showtime* and rescue of its crew and in particular:

(a) The Plan Review process relating to the original design and modifications to the keel.
(b) Prior groundings or impacts and subsequent keel inspection methods.
(c) Relevant administrative procedures and race management including boat documentation and organisation.
(d) The safety precautions, procedures and actions undertaken by the crew at the time of the incident.
(e) The application of the Australian Sailing Sea Safety Survival Course content to the experiences of the crew of *LCE Showtime.*

If thought fit, the Review will make recommendations as to:
(a) World Sailing's Plan Review processes
(b) Keel inspection procedures and practices
(c) Australian Sailing's Special Regulations

(d) Liferaft stowage
(e) Race documents, race administration documentation and procedures
(f) Onboard emergency management procedures; and
(g) Any other matters relating to the conduct of the race as the Review considers appropriate.

The Review is to provide its final report to the National Safety Committee by 1 June 2020. A preliminary report may be provided if it is considered necessary to highlight any safety recommendations that may require immediate attention.

Australian Sailing will accept a minority report.

Australian Sailing may from time to time provide additional Terms of Reference to the Review.

Powers and restrictions

The Review may do all things necessary and convenient to comply with the Terms of Reference.

The Review will determine its own procedure and decide who may be invited to meet with the Review and/or make written submissions.

The Review has no power to require people to attend its sittings or answer the panel's questions. The Review is to function on a voluntary basis. People are invited to attend. If attending, they can determine what if anything they may wish to say.

The Review has no power to make findings of fact on contested matters or to make a finding about any alleged breaches of any rules or regulations by a person or a yacht.

The purpose of the Review and any report produced by it is for the prevention of incidents and casualties, and not to attribute blame or determine liability.

Before finalising its report, the Review will give interested persons the opportunity to comment on any matter they may regard as adverse.

Jenni Maclean
Chairperson Australian Sailing National Safety Committee