



Marine Surveying, Valuations & Certification

CONDITION REPORT # 6158

"Urania"

In accordance with instructions from *Paul Hick*, the agent of the vessel's owner, *Ken Jenyns*, I attended an in-water inspection of a 16 metre aluminium sailing catamaran to prepare a condition report for insurance renewal purposes. The initial inspection was conducted whilst the vessel was afloat in berth # T13 at the Royal Queensland Yacht Squadron, Manly on 21st November, 2019 and concluded with inspections whilst out of the water at The Boat Works, Coomera between 17th February and 2nd March, 2020. The vessel was previously inspected by me out of the water on 14th March, 2012 at the Boat Works, Coomera.



GENERAL SPECIFICATIONS

Qld Registration	JQ113Q - 02/07/2020	Fuel capacity	700 litres
Length overall	16.3 metres	Construction	Aluminium
Beam	8.6 metres	Year built	1985
Draft	1.3 metres (hull only)	Water capacity	1000 litres
Aus. Registry	ON 853943	Builder	Edward & Hicks
Engines	Yamaha ME200FT	Displacement	17 tonne

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I confirm that I have no interest, financial or otherwise in the subject vessel or with the parties with whom the instructing party may be dealing. This report is addressed to the instructing party only and may not be used or relied upon by another party, other than the instructing party's insurer.

OVERALL CONDITION & SUITABILITY FOR SERVICE

The vessel appears to be structurally sound and in average to above average condition. Subject to safe and proper management practices, the carriage of recommended and regulated lifesaving and safety equipment and the implementation of any items requiring immediate attention listed in this report, the vessel represents, in my opinion, an acceptable risk for insurance and is suitable for recreational use in areas up to and including those defined as: *Offshore - Designed for offshore voyages where conditions up to and including wind force 8 and significant wave heights up to and including 4 metres may be experienced.*

In accordance with standards ISO 12217 Small craft - Stability and buoyancy assessment and categorisation - Part 2: Sailing boats of hull length greater or equal to 6 m and AS 1799.1 (general requirements) the maximum safe passenger numbers for this vessel are thirty two (32) in sheltered waters and ten (10) in offshore waters. The vessel is not required to carry an Australian Builder's Plate and holds Australian Ship's registration ON 853943 with the home port listed as Cairns.

Note: As used in this report, the rating of the vessel, machinery and parts condition was determined upon completion and review of all reported survey information including recommendations and comparing vessels to the same or similar age models. Possible vessel condition ratings are as follows:

- ✚ *Excellent* - essentially as new in appearance
- ✚ *Above Average* - has had above average care with no obvious defects or limitations
- ✚ *Average* - suitable for use but needs some maintenance or repairs, updates or cleaning
- ✚ *Below Average* - needs significant maintenance, repair or service

CONSTRUCTION

The vessel is a custom built, aluminium sailing catamaran designed by Lock Crowther as design # 70. It was built in Port Stephens, NSW by Edward & Hicks in 1985. It is fabricated from 4mm aluminium plate in the hull and 3mm in the deck and superstructure. The hull is framed with longitudinal aluminium 'T' bar extrusions and transverse 4mm plate frames with rider bars. The welding has been professionally done and the hull is free from distortion and remains secure. The vessel has an external painted finish with dagger boards fitted in aluminium casings in each hull.

The general arrangement comprises twin hulls with storage areas and buoyancy tanks forward and aft of collision bulkheads. Leading aft is a bathroom with shower stall, wash basin and marine toilet amidships at the casings for the dagger boards. The port toilet is plumbed into a holding tank mounted forward in the storage area and the starboard toilet discharges directly overboard. Both showers are fitted with grey water discharge pumps.



A single berth is mounted inboard amidships at the tunnel and outboard is seating and storage. Steps lead up from each hull companionway to the main deck. Aft of the steps is a queen sized berth inboard with hanging lockers and storage outboard. The same layout is in each hull. The main deck has a galley set to port which has a stainless steel sink with salt and hot & cold pressurised fresh water supply. A four burner *Force 10* LP gas stove and oven and a eutectic freezer is fitted on the centreline (not presently used) along with a portable 12v *Coolmate* freezer/refrigerator and an upright 220/12v *Dometic* 220 litre refrigerator. A lounge and dinette area along with a navigator's table, power distribution board and storage areas complete the main deck saloon. An access doorway with a substantial sill affords access to the undercover cockpit area which has perimeter seating and a central helm station. The cockpit has a fixed roof with acrylic front and side panels.



Trampoline netting is set forward between the hulls and the centreline beam that carried the ground tackle and forestay connections. A large timber after deck area supported by aluminium beams carries the davits, radio aerials, aluminium tender and a substantial aluminium boarding ladder which hinges back under the aft deck when it is not deployed. The ladder extends 800mm below the water and is suitable for use.



Two 8.5kg LP gas bottles are stowed forward in the cockpit in a self-draining locker and plumbed to supply the galley stove. A closing valve is fitted in the line under the stove. Outboard fuel is stowed in several PVC canisters in the starboard foredeck locker.

Diesel fuel is carried in two integral tanks forming part of the dagger board casings in each hull. In-line *Racor 500MA* water separating filters are fitted and I found no indication of leaking in the tanks, fittings or plumbing runs. Fresh water is carried in two integral tanks of 500 litres and the tank tops form the base for the companionways

in each hull. The fresh water supply is powered by two 12v *Shurflo* pressure pumps with an accumulator tank and hot water is provided by a *Kuma* heat exchanger type unit mounted aft in the starboard hull and powered by 240vAC and from the starboard engine fresh water cooling circuit. The previous LP gas hot water system has been removed.

Note: Fresh water tanks that have infrequent use may contain levels of bacteria or other contaminants that can cause disease. As a matter of course, all storage tanks, plumbing runs and filters should be drained, cleaned and disinfected annually.



The vessel was slipped at The Boat Works in February 2020 for required underwater works including removal of most of the previous coating below the waterline and reinstating a proper antifouling paint system. After extensive abrasive sanding, the hull was prepared for spot priming and an application of a sealer coat using *Jotun Safeguard UNI ES* grey primer. After allowing sufficient time to cure, two coats of *Jotun Seasafe Ultra* black antifouling were applied along with an application of *Prospeed*, a silicon polymer performance coating, to the propellers.

ENGINEERING & ELECTRICAL



The vessel is powered by a pair of *Yamaha ME200FT* three cylinder, turbocharged marine diesels. The engines are fresh water cooled and rated to produce 48kW (64hp) and close coupled to marine reduction gearboxes. Engine hours are recorded as 2103 (1971 in March 2012). Engine and gearbox controls are sheathed metal *Morse* type cables controlled by single levers at the helm. The propeller shafts are 32mm Ø and sealed at the shaft logs with carbon faced 'dripless' compression glands. Steering is hydraulically controlled from a passive helm pump in the wheel to a single ram mounted on the port side steering quadrant.

Each quadrant is connected by stainless steel wires and a 12v slave pump operated by the autopilot (*pilot not working*) is connected to the same hydraulic system. The starboard engine is fitted with a belt driven *Jabsco* deck wash pump.



Note: All combustion sources including propulsion engines (diesel and petrol), LP gas stoves, spirit and alcohol stoves and power generators (fixed and portable) have the potential to generate dangerous levels of carbon monoxide. Operating these in enclosed spaces or without adequate ventilation can result in death.



The vessel is wired for 240vAC and 12vDC. The AC system is powered by a connection to shore mains through an IP34 fitting forward in the cockpit to a distribution panel in the saloon. The supply is properly metered and protected with an earth leakage circuit breaker. A 1.5kW 12/240v inverter located under the distribution board also provides limited AC power when the vessel is at sea and an isolator switch is fitted for selecting shore or ship supply.

The DC system is powered by two 12v 100ah engine starting batteries (*Lion SMF M31-1060* port side & *Bosch SC* starboard) along with two 100ah 12v *Lion SMF M31-1060* house batteries port & starboard. All batteries were fitted new in April 2019 and are securely stowed in the machinery spaces. The batteries are charged by the engine driven charging alternators and a 240/12v *C-Tek M300* 30 amp charger. A *Morningstar TS-45* solar charging regulator is mounted in the starboard lazarette but no solar panels are presently fitted.



Note: For vessels built prior to 2002 the owners and operators have a duty of care to ensure their vessels are electrically safe. Where this report indicates possible non-compliances on the LV (low voltage 240vAC) system, I recommend an inspection by a licensed electrical contractor is undertaken. It is advisable to have the vessel electrically tested every five years.

GROUND TACKLE



The primary anchor is a 45kg (100lb) galvanised *Manson CQR* type set in a twin roller assembly at the forward centreline. The anchor is connected to a 100 metre length of 13mm short link galvanised chain with a stainless steel shackle carried on the port gypsy and a 30 metre length of 10mm short link galvanised chain and 40 metres of 25mm rope is carried on the starboard gypsy. The tackle is lifted by a 12v *Muir Thor* horizontal windlass fitted with

dual chain gypsies and a single rope capstan and the chain is stowed in two self-draining foredeck lockers. The windlass drive motor has been removed for repair. The chain is in average condition and would benefit from replacing the stainless steel connecting shackle with a galvanised unit.

Additional spare anchors are carried in the foredeck locker including 27kg & 16kg CQR's and a coral pick reef anchor. A rope bridle with a stainless steel claw is carried to eliminate shock load from the winch while the anchor is deployed.

Note: Users should be aware that due to the location of anchor motors and increased moisture levels that occur in these areas, all winch equipment, motors and capstans should have a regular service of drum and electrical contacts.

LIFESAVING, SAFETY & ELECTRONICS

The following were sighted and tested working unless otherwise stated:

- ✚ 3.2 metre *Savage Gull* aluminium dinghy with oars, anchor and an *Evinrude* 15hp outboard, stowed on the aft deck and handled by a pair of aluminium fabricated slewing davits, each with a manual winch – inner unit is new.
- ✚ Hard plastic 750mm Ø life ring carried on the aft cockpit rail – *degraded reflective tape & no lanyard*
- ✚ *Plastimo* bulkhead compass mounted in the cockpit forward at the helm, a *Logix* fluxgate compass on the helm console & a *Raytheon* hand held electronic compass at the navigator's desk
- ✚ Set of compliant inshore flares
- ✚ *GME MT406G* 406MHz EPIRB expiry date June 2029 – *AMSA label to affix*
- ✚ Perimeter aluminium tube safety rails and stanchions with stainless steel mid wire
- ✚ *Furuno FCV-600L* depth sounder
- ✚ *Garmin GPS Map 750S* chart plotter with internal Australia wide charts
- ✚ *Navman 3100* wind speed and direction indicator
- ✚ *VDO* ship's speed and log
- ✚ *Fusion* flat screen television in the saloon
- ✚ *Codan 8528S* HF/SSB radio and auto tuner
- ✚ *GME GX 558* VHF and *GX 297* 27MHz radios
- ✚ *Kenwood* audio entertainment system



BILGE & FIRE SYSTEMS



Automatic 12v submersible bilge pumps are fitted along with manual pumps that draw from the machinery space and amidships compartments. A portable backup manual pump is also carried which can draw from any hull compartment.

A pair of 1.0kg dry chemical powder (DCP) type extinguishers, dated 05/2011 are fitted in the saloon and the galley and two similar 2.0kg DCP units are carried, one in each machinery space. Two fire blankets are fitted in the galley. There is no fixed fire smothering or detection system fitted in the machinery spaces and a smoke detector is fitted in the saloon but was not working when tested.



RIGGING & SAILS



The vessel has a masthead cutter rig with twin furling headsails rigged off the inner and outer forestays and a mainsail slab reefed to the boom and supported in lazy jacks. The aluminium mast and boom are supported by two sets of in-line spreaders, fore and aft lower stays, continuous intermediate, upper and aft intermediate shrouds and a split back stay. An aluminium extruded hollow section whisker pole is carried on the foredeck. The standing rigging is all stainless steel and in average condition. The main forestay is supported by the connecting spar beam and the inner forestay is supported by stainless steel stays running either side to each hull.



Five self-tailing *Maxwell* halyard winches, one of which is 12v powered, are mounted on the coach house forward in the cockpit and five self-tailing sheet winches *Arco 52* and *Barlow* are fitted on the aft bulwark capping in the cockpit. A lightweight spinnaker is carried and can be rigged off either bow in light airs. Two headsails with UV weather strips and a mainsail in a zippered boom bag are rigged to the vessel.

Note: The rigging was visually inspected from deck level to a height of 2 metres. Winches, blocks and turning sheaves have not been dismantled for detailed inspection, unless specifically mentioned. It is recommended that all winches be stripped for inspection and greased before re-assembly.

ITEMS REQUIRING IMMEDIATE ATTENTION

- ✚ Replace the smoke detector in the saloon.
- ✚ Test & tag the shore power lead now and again every three years or at the first sign of damage or insulation breakdown.



- ✚ All portable fire extinguishers are past their recommended service life of five years and are now due for replacement.
- ✚ Replace corroded hose clamps on the submersible bilge pumps.



COMMENTS & RECOMMENDATIONS

- ✚ **Marine Pollution** - Irrespective of what size your boat is it is an offence to deliberately discharge garbage into Queensland coastal waters. Severe penalties apply under the *Transport Operations Act 1995*. As most of our garbage is made from non-biodegradable materials it persists in the marine environment for quite some time and not only negatively impacts on marine life, but vessels as well by fouling water intakes and propellers etc. Maximum Penalties are \$262,500 for an individual and \$1,312,500 for a corporation.
- ✚ Queensland legislation requires all ships over 15 metres in length to have insurance, sufficient to pay for potential pollution clean-up, salvage and wreck removal. The insurance policy must meet the following requirements: All recreational ships more than 15 metres but less than 35 metres in length must have an insurance policy that provides \$250,000 for pollution clean-up and \$10,000,000 for salvage and wreck removal.
- ✚ Resecure the pin in the boom gooseneck fitting.
- ✚ Replace the reflective tape on the life ring and fit a 16 metre length of floating line.
- ✚ The standing rigging appears to be over ten years old and as such, should be inspected and issued with a rigging or certificate or scheduled to be replaced.
- ✚ At the first sign of damage or within twelve months, the IP34 rated shore power inlet fitting which is no longer compliant for external use is to be replaced with an IP66 rated fitting and the connections on the lead replaced to match.
- ✚ Galvanised fittings should be fitted where chain and anchor are galvanised. Stainless steel fittings are not considered suitable for anchoring loads and will promote galvanic corrosion when connected to galvanised anchors and/or chain. Seizing wire must be either Monel or plastic to avoid galvanic corrosion from dissimilar metals.
- ✚ Replace the stainless steel anchor shackle and bridle claw as these will promote galvanic corrosion on the galvanised chain.
- ✚ Ensure the EPIRB is properly registered which can be done at www.amsa.gov.au
- ✚ The Australian Ship's Registration lettering on the hull is incorrectly shown as 653943 and the first number needs to be changed to an 8 for accuracy.



- ✚ Clean all gutter drains around flush fitting deck hatches and replace sealing gaskets as may be required.
- ✚ The sheets and rope halyards would benefit from an overnight soak in fresh water with fabric softener followed by an overnight rinse in fresh water.
- ✚ Tension the side safety wires and tape off any exposed wire at the swages.
- ✚ Label deck fillers clearly as to use.



This survey has been prepared using information provided to me by the owners, my previous report # 3307 from March 2012 and from my own current investigations. Every effort has been made to ensure the accuracy of the information and to cover all areas of the vessel accessible to me. I did not remove any linings or destructively test areas of the vessel. I have not inspected woodwork or other parts of the structure which are covered, unexposed or inaccessible and I am therefore, unable to report that any such part of the structure is free from defect. Accordingly, areas not readily accessible are voided from this report. Further exclusions from this survey include pressure testing of tanks, lines and plumbing; continuity and load testing; insulation resistance breakdown testing; strain checks of conductors, plumbing runs and connections; verification of the accuracy or range for any gauges, meters or navigation instruments; testing of solar or wind generators and water makers.

A full inventory of all included chattels was not undertaken.

This survey does not include research into any discrepancy between the year designator in the hull ID number and the claimed model year. It does not include verification of registration, title, or documentation; or check-off of any owner supplied inventory or listing sheet of "included gear". It does not include investigation into any direct representations, hearsay or questions about the vessels past usage (including charter), damage, replacements, repairs or age of any equipment and structures – especially the accuracy of hour meters or the validity of service records – all of which are impossible for the surveyor to research or independently verify. Nor does the survey include obtaining specifications from component and equipment manufacturers to determine any part's suitability for marine use.

This report was prepared by Nicholas J. Lockyer, who is an accredited class 1A yacht and small craft surveyor (up to 40 metres) with the *Marine Surveyors Association* (Australia) and an associate member of the *International Institute of Marine Surveying*. Comments in this report are based on *Australian Standard AS1799.1* and the *Recreational Craft Directive 2013/53/EU*.

Report completed 5th March, 2020 and issued by the undersigned,



Nicholas J Lockyer, AssocIIMS
Senior Yacht & Small Craft Surveyor
Valuer & Certifier