

COCONUT'S PREPARATIONS

By Mark Sinclair

Coconut's preparations for the 2018 Golden Globe Race

Shakedown Sail Shows How She Goes!

JULY this year marked the first anniversary of purchasing *Coconut* for the 2018 Golden Globe Race. In this 12 month period, a major refit was conducted. This included four months where *Coconut* was out of the water for work on the hull and mast. *Coconut* was re-launched in early December and preparations have continued and systems have been tested on a number of day-sails in Gulf St Vincent.

Coconut's refit was substantial and involved work on the mast and rigging, hull and deck, and down below. The mast is completely rebuilt and strengthened from a single- to two-spreader rig, the standing and running rigging are replaced, new headsail furlers are installed for the jib and staysail, all halyards now lead back to the cockpit, and *Coconut* has a new set of sails. Fibreglass mat is laid up inside the hull to take the load from the new oversized chainplates. Hanging knees strengthen the hull, deck and coach house. We have added a crash bulkhead in the bow, an ocean-rated hatch in the forward cabin, a watertight door in the main bulkhead, and new polycarbonate windows in the main saloon and the new doghouse. *Coconut* is rewired, with batteries sited above the waterline, and solar panels, VHF and HF radios as well as an active radar transponder are installed.

By July this year, work progressed to the stage where it was timely for a more thorough shakedown sail to evaluate readiness. After a long period of settled weather, which extended to the end of June, the weather became more boisterous. This presented a problem; if I was to run down the coast to Portland or King Island, it could be very difficult to get back

to Adelaide to continue preparations. I adopted a more conservative plan to head down Gulf St Vincent and west through Investigator Strait, then southwest into the Southern Ocean, a run to the east passing approximately 50 nm south of Kangaroo Island, then head back up to Victor Harbor and through Backstairs Passage, sail up to Edithburgh and then back across to Adelaide. By adopting this plan, I would be able to keep *Coconut* close to Adelaide to continue preparations for the race. During a week at sea, I covered about 700 nm in one large lap of Kangaroo Island.



Running south of Kangaroo Island

To make the test as thorough as possible, the shakedown was conducted under similar rules to the Golden Globe Race: I sailed without GPS, digital watch, calculator, electronic autopilot or any other equipment other than safety equipment allowed under the rules. I did make one exception and took my iPhone to take photos and video and upload these to *Coconut's* Facebook page to share the experience. I headed out with my sextant, chronometer, magnetic compass, Walker trailing log, paper charts, parallel ruler, Nautical Almanac and Norries Tables. This was to be a shakedown cruise for me as much as for *Coconut*.

I started by calibrating the sextant for perpendicularity error, side error and index error. Then, before I exited Investigator Strait, I took my first sun sight for many years. To plot a position line from the sun, a spherical triangle is solved to determine the calculated altitude, using an assumed position and looking up the declination and local hour angle from the Nautical Almanac. This calculated altitude is compared with the measured sextant altitude which is corrected for refraction, height of eye and semi-diameter of the sun, and the difference is plotted on the chart. The spherical triangle can be easily solved using a calculator; in the past the publication NP 401 was used, which tabulates the calculated altitude for given latitudes, declinations and local hour angles. However as calculators were not available to the original contestants in 1968, they are not permitted under the rules of the race; and as NP 401 is out of print, I was unable to track down a set. Consequently I had to revert to first principles, by drawing a spherical triangle and calculating the altitude using the spherical cosine rule and logarithms of trigonometric functions which are tabulated in Norries Tables. After a bit of head scratching to remember how to add and subtract the bar of a logarithm which is used to represent the position of the decimal place, I eventually determined my position and headed offshore.

Navigating using more traditional methods also refreshed my awareness of other navigational techniques and equipment. The Walker trailing log was mounted on the high side of the quarter and accurately recorded distance run. It has three dials: the first is graduated in 0.05 nm and measures up to 1 nm; a second in 0.5 nm to 10 nm; and around the outside, every 5 nm to 100 nm. I found it useful to take a log reading on departure from land, on major alterations of course, and whenever taking a sun sight in order to transfer the position line between sights. Taking a log reading involves climbing into the cockpit, but I have worked out that to stay warm and dry, it can be read from the cabin by unshipping the telescope from the sextant and using that to magnify the scale. The echosounder is also most useful when crossing a depth

contour to provide a position line. The combination of trailing log, echosounder and estimated course made good were invaluable in determining my position. Another useful aid was the time signal which is transmitted from Hawaii on HF at a frequency of 15 MHz, and is used to check the rate of the chronometer. It was a trip back in time and helped me regain the perspective of traditional navigation.

During the shakedown, I found a number of things worked really well. The doghouse and companionway coaming provided a secure and sheltered seating position behind the dodger. Running the halyards back to the cockpit enabled me to reef and un-reef the mainsail on all points of sailing without going forward. The number 3 headsail and staysail are a great combination in strong winds. I also tested the emergency rudder, deploying it off Edithburgh and sailing across Gulf St Vincent to Adelaide Outer Harbor, and I also practiced towing warps while running downwind with the storm jib sheeted amidships. Despite it being the middle of winter with low sun angles, the solar panels kept all the batteries fully charged. The Echomax radar transponder also worked really well alerting me when large shipping was in the vicinity.

There were many lessons learned. Dedicated storage in the main saloon was inadequate and the lee cloths were not high enough. Storage in the forward cabin was not secure, and in heavy weather items fell against the back of the watertight door preventing it from opening. In the cockpit, the double main sheets were often fouled and the staysail sheets fouled the life raft when coming about. The headsail pre-feeder was inadequate and I ripped sails when hoisting. A bolt fell out of the leg of the self-steering and, although it was fitted with a recovery line, I did not carry spare bolts. The captive nuts on the emergency rudder were not secure enough and I did not have spares. The engine remained



Additional grab rails for the doghouse



Mark meticulously checks everything he plans to take on board.

difficult to start in cold weather and the scaling on the power monitoring system was incorrect.

Since returning from the shakedown, a number of improvements have been made. Additional shelving is now installed on the port side. Dedicated storage for the chronometer and deck watch has been fitted. Additional canvas bags have been installed in the cockpit to secure the main sheets. Additional grab rails have been fitted on the doghouse and on the foredeck. Locking nuts have been fitted to the headsail tracks. Diagonal webbing has been rigged across the life raft to prevent the staysail sheets from fouling. Pad eyes have been fitted to the deck to better secure the lazarette. Positive retainers have been fitted to the floorboards and catches fitted on all lockers. The captive nuts on the emergency rudder have been strengthened, and spare bolts with tee pieces welded to the heads have been manufactured. The number 2 headsail has been repaired,

additional pre-feeders fitted and the luff of the storm jib extended to prevent halyard wrap between the head of the sail and the top of the furler. A spare staysail is being made which can also substitute as a number 4 headsail, and a short spinnaker pole is being manufactured to boom out the staysail when running. The bunk cushions are being replaced, lee cloths extended and canvas hold-all bags installed in the forward cabin. The solar-charging monitoring system has been recalibrated and now appears to read correctly. On the Farymann diesel, we have replaced the piston rings and valve seats, reground the valves and repaired the cylinder head, where it had corroded in the air inlets, to improve compression for cold weather starting; positive retainers are also being fitted to the timber hatch over the engine so it remains in place. More warps will be carried to tow astern in heavy weather and two small car tyres to act as drogues.

The 2018 Golden Globe Race starts on 30 June which is now just 9 months away. There is a possibility that the starting arrangements for the race may change, so I will need to remain very flexible. The current plan is to transport *Coconut* to London by sea and onto Plymouth by road. *Coconut* will be slipped at RSAYS in early November for preparation for transportation. This includes dropping the mast, building a cradle, inspecting the rudder shaft, antifouling, painting the upper deck with non-skid and painting down below, as well as a myriad of other small tasks.

I am very grateful for the continued support provided by RSAYS and members to enable me to prepare *Coconut* at the Club, and all are welcome to drop by and inspect the progress and make suggestions.

