

01 The unusual sight of a ship on wheels:  
*Endeavour* on dry land underneath Sydney's  
Anzac Bridge, aboard the 84-wheel shiplift.  
All photographs Andrew Frolows/ANMM

## *A ship ashore*

ENDEAVOUR'S BIENNIAL DRY DOCKING

Some aspects of *Endeavour's* maintenance are obvious, such as rigging, oiling and painting. But much else goes on behind the scenes to keep the ship sailing, writes her First Mate, **Anthony Longhurst**.

IN ORDER TO KEEP *Endeavour* seaworthy, safe and 'in survey' – meaning legally able to sail at sea – the ship undergoes an annual inspection carried out by the Australian Maritime Safety Authority (AMSA). This survey inspection is carried out in accordance with a predetermined schedule over a ten-year period.

Every year the vessel's lifesaving and safety equipment – life jackets, firefighting equipment, life rafts, radios, water-tight hatches, escape routes and the rescue boat – are checked, as are maintenance checklists, logbooks and records. All items associated with oil and sewage pollution control measures are examined, along with the fuel that we use, to ensure that we are abiding by the laws regarding air pollution.

Every second year we remove the ship from the water for her biennial underwater survey. Here we have the opportunity to inspect the hull for possible damage. One of the problems with timber ships is the threat of teredo worm – the termites of the sea. Fortunately *Endeavour's* underwater planking is Western Australian jarrah, a species chosen because it is one of the least susceptible to teredo attack.

In addition to inspecting the planking we withdraw random hull fastenings to inspect them for corrosion and remove all of the valves in the ship's pipe work that are open to the sea. These valves are cleaned and pressure tested to ensure they are watertight when closed.

Any small cracking in planking is investigated and repaired as required and the caulking seams between the planks are inspected. Again, any suspect seams are opened and re-caulked.

During this year's docking, we chose to remove a short plank from the bow, just above the forefoot. The plank had several cracks that have been there since the ship was built and we figured that it would enable us to not only replace the plank, but also to inspect the superstructure behind.

Once all necessary repairs are made, the hull then receives a fresh antifouling paint system that keeps it free from growth until the next docking.

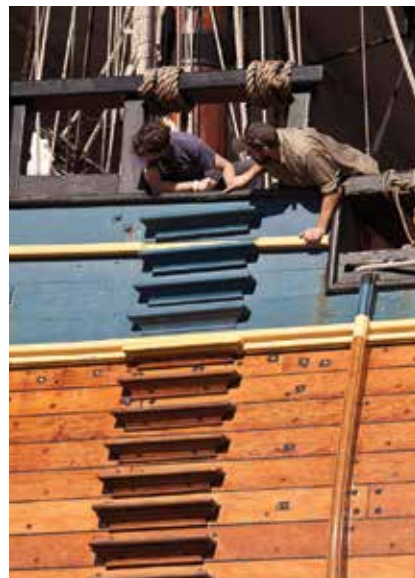
Every second docking we withdraw the propeller shafts and disassemble our feathering propellers. The propeller bosses are opened, the blades removed and the

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01 A cherry-picker is needed to inspect the ship's stern, standing some 12 metres above ground.

02 Shipkeeper Peter Lightbody and shipwright Cody Horgan inspect the ship's topsides.

moving parts inside are inspected for wear. The shafts are cleaned and checked for electrolytic corrosion and wear at their bearing points, and the bearings that keep the shafts securely straight and aligned with the engines are also checked. The bearings which the shafts pass through are prone to wear and are occasionally replaced.

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This latest docking fell in a year where the survey schedule required us to remove some of *Endeavour's* 100 tonnes of lead ballast, so that we could inspect the internal hull beneath the ballast for any rot that would otherwise go unnoticed. Fortunately the hull was found to be in the same condition as when the ship was built, albeit a little dusty after 22 years.

Before the next 12-month survey certificate can be issued, *Endeavour* is also subject to an underway survey. Here the ship undergoes mostly engineering tests regarding her propulsion, both ahead and astern. Her steering is tested, the anchor is dropped and weighed, the rescue boat is launched, run and recovered, and the fire hoses are run out and charged. Bilge pumps and back-up emergency pumping arrangements are tested along with the competency of the ship's professional crew.

Having just completed the last docking, it is reassuring to know that *Endeavour* is in prime condition to carry out her next round of exciting voyaging. In early 2016 we will be sailing to Victoria and South Australia, visiting Geelong, Adelaide, Port Lincoln and Portland before returning to Sydney.

For those of you who are interested in joining us for an experience like no other, please visit [endeavourvoyages.com.au](http://endeavourvoyages.com.au) for more information.