

# PV JOHN OXLEY RESTORATION

## PROGRESS REPORT November - December 2018.

**Engine room:** - Ian Roy and Ian Bird continue to make the replacement Main Engine Turning Gearbox with completion expected within days.

**ANOTHER MILESTONE ACHIEVED:** The Propeller Shaft was coupled to Main Engine and turned over using the turning gear electric motor. The purpose was to lubricate the stern tube bearing due to the shaft not being rotated since installation and to avoid getting a flat on the bottom of the shaft from sitting for so long.

Power loads on the turning gear electric motor during the operation were 50% less than expected and without vibration or shuddering in either the main engine, crankshaft or propeller shaft.

This was a good result because of the Planned Maintenance being implemented to lubricate the ME and Reversing Engine and turn over at least once a month.

This event caused much excitement by the surrounding volunteers & staff watching the propeller turn from a safe distance—don't worry it turns at only one revolution a minute. Chief Engineer Garry Burns and his team were delighted with the results.

**Well Deck, Main Hold and Forward hold:** The bulk of this restoration area has been completed and now there is welding and installation of the Main Hold and Forward Hold Tween Deck and lower holds steel flooring. An intricate job fitting to and around the hull frames and curves of the hull. The Workshop Team cut each steel floor plate section to measurements given and then each piece installed by Tim Davis and his Team.

**Electrical:** The ships electrical installation under leadership of Grant Campbell is proceeding as planned with cable trays being installed by Richard Ames and team in the Bunker and Stokehold spaces. Pictures show off Richard's intricate work.

**Boiler Tube Removal:** The Port Boiler tube removal is now completed and awaits a contractor to clean by hydro blasting.

**Workshop:** The team continue to make new and restore old Vent Stacks for the Stokehold and engine room.

**Handrail Stanchions:** New Safety Railing is required to meet current specifications. These railings are for both the Boat Deck and Forecastle. A good price has been obtained from Vietnam.

A sample stanchion has arrived to ensure it will be suitable for use and was most acceptable apart from a minor adjustment in the spacing of the top rail. An order for the total supply will be placed shortly.

**Foremast:** The mast has been stripped of wires, turnbuckles and shackles, and plans continue to be prepared for the type of restoration required. Drawings for the restoration work have now been completed.

**Planning & Naval Architect:** A successful meeting was held on 25 October with our Naval Architect and topics included in the discussion were subdivision, fire plan and SMS.

Work continues with calculation of deck area to determine passenger capacities and establishment of a first aid centre in one of the cabins.

Work continues on the preparation of an AMSA exemptions list and determining Navigation Light positions.

**Pilots Saloon:** Bob Ellis and his team continue the Saloon Fit out and it will not be long and one can envisage celebrating in the completed saloon with a glass of Champagne.

**Ships Compass No. 254 Restoration:** Heritage fine instruments & Heritage electrical switchboards restoration specialist, Gordon Robertson has excelled yet again and below is his own article outlining his latest achievement and quite a story too.

# JOHN OXLEY

## SHIP'S COMPASS

### No. 254

The **John Oxley** now has a working compass and compass binnacle ready to be installed when the wheelhouse is completed. However, getting to this point has been long, complicated and frustrating.

The initial task was to refurbish the binnacle, which did not come with a compass. As this neared completion, we needed to find a suitable compass that would fit the binnacle. We ratted through the



items in the depository at Wharf Seven and found only one that would possible suit but unfortunately the compass was in a pretty sad state – the top glass was shattered; the compass was bone dry and it looked rather beaten up. But it was the right type, age and size and most importantly, had the right mountings to suit our binnacle. There being no other suitable choice, it was destined to be our compass.

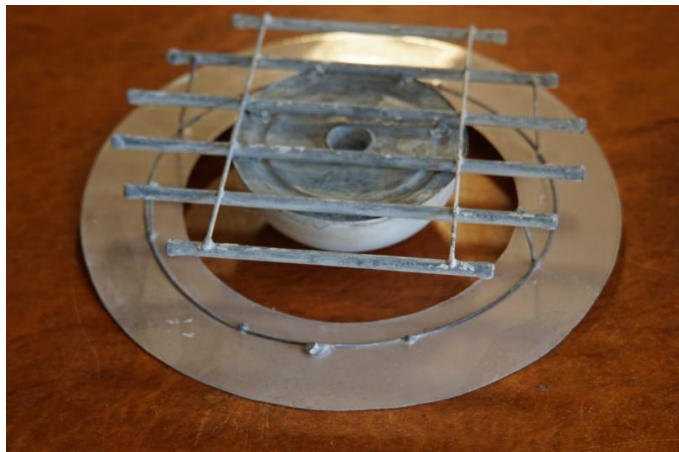
Knowing that this was not going to be a quick fix, I took the compass home to live in my workshop for a while with the binnacle. I checked to make sure that it was going to fit

the binnacle and it dropped straight into the gimbal ring and only needed a new pair of gimbal keepers to keep it in place. One point down, heaps to go.



The compass project was started in April 2018 and over the next several months, between other jobs, family commitments and trips, the compass was dismantled and refurbished. New top glass was cut. The interior paint was powdery and rubbed off with a finger so this was replaced by epoxy enamel, the compass card getting the same treatment. (but very gently).

The compass card consisted of an aluminium frame containing the rod magnets and a float, attached to a mica disc on which was glued a paper compass rose.



Removing the dusty paint residue from the paper rose was a delicate task as I did not want to replace the original rose. The paint also just rubbed off the metalwork. The mica had delaminated in a few places and this was fixed using cyanoacrylate adhesive (better known as Super Glue). The pictures below are before it was repainted. I did consider touching up the printing on the rose to make the sector markers blacker but was not sure how the ink would react with the compass fluid so I left it alone.

Having painted the compass card, I checked the jewel bearing for wear (negligible, despite its age) then carried out settling tests on the card. This consisted of using a magnet to pull the compass off its heading by 90 degrees and timing how long it took to settle back. It seemed to me to take too long so I increased the strength of the rod magnets by "stroking" each of them with a powerful magnet.

This greatly improved the settling time. (Doing this incorrectly could reverse the compass magnet, not the desired effect.)



Having spray-painted the interior of the compass I then had to carefully scrape the new paint off the quadrant marker wires as they tended to disappear into the white background. You can just see them in



the picture.



Both top *and* bottom glass had to be replaced; the top as it was smashed and the bottom because I cracked it after it was refitted and the cast brass ring was putting pressure on one point. The old leather seals for the glass were replaced by silicon sealant which produced an excellent seal, so good that it was a real pain to remove after I cracked the bottom glass. A new piece was cut and a fibre gasket added to the assembly to give some clearance of the cast ring from the glass, the second time around. You can see the sealant squeezing out around the bottom glass. I had to use a different approach when fitting the top glass as there was then no way to clean off any sealant inside the compass after it is sealed.



The exterior was given a coat of epoxy enamel with some surfaces left clear for buffing.

In case you are wondering, the compass has top and bottom glass as it is illuminated from a light box underneath.



Now to refit the top glass and seal up the compass, making sure to not have any sealant squeeze out from under the glass on the inside. Remembering, of course, to put in the compass card. (I was ready to drop the glass onto the first ring of sealant when I noticed, by chance, that the bowl was empty.)

With the bowl sealed (with compass card inside) and the sealant given several days to cure, it's time to fill the compass with fluid. Note the screw on the side of the bowl, that's the filling point.

This compass would have most probably been filled originally with a mixture of distilled water and alcohol but having spent some time researching the manufacturer of the compass, I found that they now use a synthetic hydrocarbon called **Isopar L**. After much chasing around, I managed to obtain 5 litres of this fluid from a supplier that makes industrial hand cleaner. Having explained to him how the product was to be used, he most generously refused to accept payment.

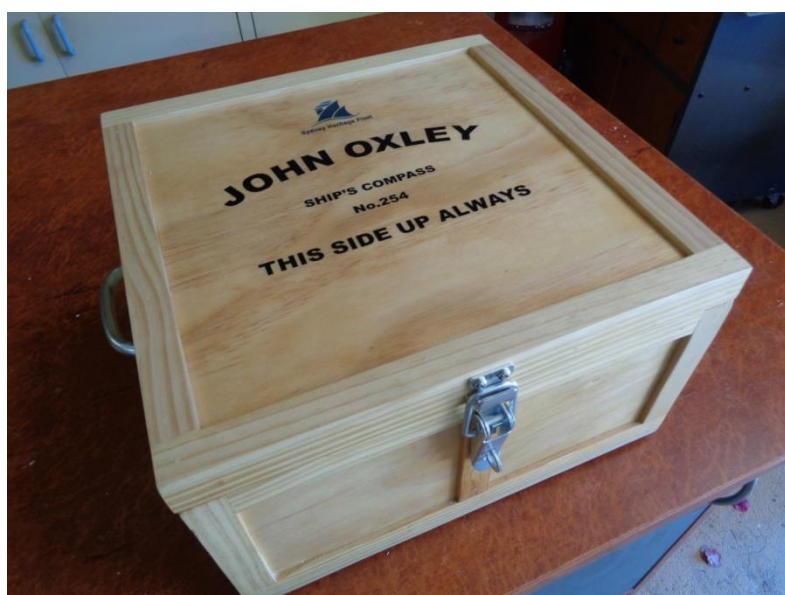
To fill the compass, there is a screw hole on the side which needed a syringe to transfer the fluid. A slow process and not without a certain amount of spillage. Filling was completed and the last bubble was extracted. The screw replaced and all was well. So, I thought. At that point, I had not refitted the weight casing (shiny black thing shown above). The compass was sitting on some sheets of newspaper and after an hour there was a stain under the compass. We have a leak (or two, or three!). The soldered seam joining the two halves of the bellows was the source of the leak(s). The suspected areas were marked and the fluid drained. The job was now to re-solder the seam with fresh solder using a heavy-duty electric soldering iron (no naked flame, thank you). Over the next several weeks, the leaks were fixed but there was always another one. Just the tiniest smudge of



fluid. I could not stop the problem and in desperation considered opening up the bellows and re-soldering it entirely. This is a big job and the last resort. Get it wrong and the compass is stuffed. However, a leaking compass is just not acceptable. Much discussion took place with several compass adjusters here and in the UK as well as our own people. Valid suggestions were made and I was even advised by one adjuster to “toss it away, not worth fixing.”

The final decision was made to coat the joint with epoxy. I used Araldite for the task and gave the joint a good coating. This didn't go off

and stayed tacky. Gave it a week and scraped it all off. Bought some more Araldite and tried again. This time it set hard (but with some flexibility). Problem solved, finally.



I carried out the settling tests again, this time with a fluid filled compass and the times are much better than in free air.

Now I'm happy and very relieved.

This is a reasonably brief account of the refurbishment but it took over seven months to complete. I originally thought that it should take only about two months.

A carry and storage case have been made for the compass and it will now be ready to install with the binnacle into the completed wheelhouse.



Although I have enjoyed bringing the compass back to life, this has been one of the most challenging and frustrating tasks I have undertaken at SHF but I am sure it will not be the last.



Yours Aye,  
Gordon Robertson

**HELP IS ALWAYS NEEDED PLEASE:** Please contribute to this proud ship's restoration so that we may launch her in 2023!

BUY A BOILER TUBE ONLY \$75, OR BUY UP TO 320 OF THEM, SORRY NO BULK ORDER DISCOUNT.

The following is a list of major items needed at the moment and you are invited to peruse them. Should you wish, we will be happy to identify you on a piece of equipment that you donate for, should it be practical to do so.

2 Generator Sets 100kVa each \$25,000.

1 Diesel emergency fire pump \$2,600.

Stanchions \$13,700.

Boiler Tubes \$24,000 or \$ 75 each.

Steering Chain \$3,500.

Propeller Seal \$7,500.

2 lengths Anchor Chain, each \$3,500.

2 Anchors each \$2,600.

A quick link to our funding pot is: <https://buy.shf.org.au/donations> and be sure to type in the appeal preference box "John Oxley". Thank you.

**GOODS IN KIND or at Discounted Prices:** If readers have contacts that you could introduce to us with the view to SUPPLYING any of the items listed above, please inform us. Thank you.

**Promotion & Fundraising:** Active work continues on Social Media via Instagram and Face Book. Commencing shortly will be a visit to companies HR departments and Retirement Consultants view recruiting volunteers to cover the vacancies listed below under Positions Vacant.

**Volunteer Positions Vacant:** Readers are reminded that more volunteers are required both on board the ship and in the workshop. Anyone is welcome skilled or un-skilled, as we train volunteers! The following key areas of experience and interest would also be much appreciated:

*Steel Fabrication, Carpentry, Painting, Boiler Restoration, Machining in the Workshop, Electrical, Scissor Lift operators, Crane operators & Dogmen. Please contact our Volunteer Services Team on 02 9298 3888 or [vservices@shf.org.au](mailto:vservices@shf.org.au) and mention volunteering on John Oxley.*

**The following pictures support the progress achieved. Michael Schultz 2<sup>nd</sup> December 2018.**



**Restored Engine Room Vent**



**Pilots Saloon flooring caulking progress**





**Cabinetry by Alexandra McFarlane**



**Col Tooher starting Forecastle restoration.**

**Col wishes Brian Hill would come down and help his old mate.**



**Good examples of electrical cable tray work.**





**Chris cleaning up new floor plates in the Tween Deck**