



Diving Service



- Marine Contractors

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To Tiff Brown
Department of Crown Lands

From Alan McLennan
Project Manager

LTMMMP Inspection of ex-HMAS Adelaide wreck

13/4/2017

Thank you for asking us to inspect the ex-HMAS Adelaide in order to carry out the requirements of the Long Term Monitoring and Management Plan (LTMMMP) for structural condition monitoring.

The Dive Team was Supervised by David Allchin with the two lead Divers being Alan McLennan and Nathan Ryan and with one Attendant supplied by Terrigal Bluewater Charters. The diving equipment was SCUBA and breathing gas was Nitrox 32%. The divers made two full sweeps from bow to stern and observed the major monitoring points listed in LTMMMP Sec 2.1.2, but did not attempt to visit every space in the wreck. The depth of the Diving was limited to 30 metres in order to maximize Dive time and comply with AS2299.1.2007 Sec 6. This depth allowed the divers to descend to just below the main deck line and observe the hull down to the seabed. The sea conditions were poor with a 2m swell and a 15knot southerly which died during the morning. Visibility was very poor on the surface but was clear below 10 metres.

Structural Integrity (ref LTMMMP 2.2.2)

The wreck can be divided into two halves. The upper section above the main deck is the aluminum superstructure, which holds the mast and bridge area. The lower section from the main deck to the keel resting on the seabed is the steel hull, which contains the machinery and living spaces.

Steel Hull – Observations –

The steel hull is substantially unchanged since our last inspection. There was no sign of any cracking or deformations. The main deck is free of cracking with no signs of warping. The hull has a uniform coverage of marine life with very few signs of corrosion outbreaks. The corrosion level appears to be very low.

The hull was fully supported by the sand. There was no scouring observed. The sonar dome was just visible at the bow and the duck tail was just covered on the stern. The sand level was very close to the ship's waterline.

Aluminum Superstructure - Observations

We found no new cracking of the aluminum superstructure. In fact the cracks that existed in the lift shaft area on Deck 02 have not propagated at all in the last year. The edges of the cracks which were previously jagged and bright metal and now completely covered in marine growth indicating a very low level of movement.

LTMMMP Monitoring Locations

The Divers made note of the monitoring items listed in the LTMMMP Locations 1 to 6.

Location 1 – the hull plating on the forecandle just aft of where the GMLA launcher was removed. There has been no deterioration in this area.

Location 2 – amidships at the base of the forward screen (where the superstructure and hull are bonded together) – There is no visible deterioration in this area. There is no sign of any separation between the forward screen and the hull.

Location 3 - at the vertical midpoint of the main masts –The entire main mast was examined. The mast is heavily encrusted with marine life restricting a detailed examination. However no sign of cracking or deformation was observed. All parts of the mast remains straight and true. The feet of the masts were also closely examined and no sign of cracking or deformation were observed.

Location 5 – the hull plating on the transom – The transom area has changed very little since the sinking. The fitting secured to the transom are all still intact.

Location 6 – where the helicopter hangars are attached to the hull. In May 2015 the starboard hangar wall suddenly broke way and fell to the seabed. The scars of this damage have now been covered up with marine growth and most visitors would not notice that it was missing. It appears to be a normal opening in the wreck. The structural members that hold up the remaining walls are still fully intact and appear to be undamaged. The centre wall and port side hangar wall are fully intact. The remaining hangar components appear to be tolerating the ocean forces very well.

Internal Debris

At the time of inspection, the size of the swell limited access to the internal parts of the wreck. We did inspect all the access portals above 30 metres and verified that they were all clear.

2.1.3 Vessel Stability – The vessel developed a 4 degree list to port in 2012. We confirmed that this remains unchanged by checking the depth of the hull on each gunwale amidships (a difference of 0.8 metres) and also by using a spirit level on the rear deck behind the hangar.

2.1.4 Vessel Position and Vessel Settlement –

The vessel position is unchanged since our last inspection. The trim is unchanged based on our check of the water depth at the bow and stern. The vessel has not moved its horizontal position which we confirmed by testing with a GPS.

Corrosion

There was no signs of corrosion observed. In previous surveys we have noticed red rusticles on the steel hull and white corrosion deposits on the aluminum superstructure. In this survey we saw none of these telltale signs of corrosion. The marine growth coverage on all exterior surfaces is 100% indicating very stable metal underneath it.

Marine Life

The fixed life on the hull has become thicker and more widespread. The aft deck now has well developed sponges growing over it. The upper decks have dense cungevoi and anemone growth. The Kelp (Ecklonia) beds are flourishing on the upper decks.

The fish life is rich. The schools of Kingfish are spectacular and are found on all parts of the wreck and in the surface waters. Many fish have found niches in the wreck including several large wobbegong sharks.

April 18, 2017

Conclusion about Structural Integrity

- The vessel is unchanged since our last inspection in June 2016.
- No new dangers were found that may affect recreational divers
- No signs of corrosion were observed
- Hangar damage is stable
- No change has occurred to the ship position or list.

Attached: following are photographs which illustrate each part of this inspection.

Thank you for asking us to undertake this inspection, regards,



Alan McLennan
Project Manager

Typical Mast connection to Deck
02. No signs of any deterioration



The Main Mast is intact and has no visible defects. It is heavily encrusted in marine life.



The small towers on top of the Bridge are intact and heavily encrusted with marine life



The internal passage ways are clear. This picture show the bridge with clear floor and "Captain's Chair" intact



The area around the missile launcher on the forward deck is free of cracks or deformation.

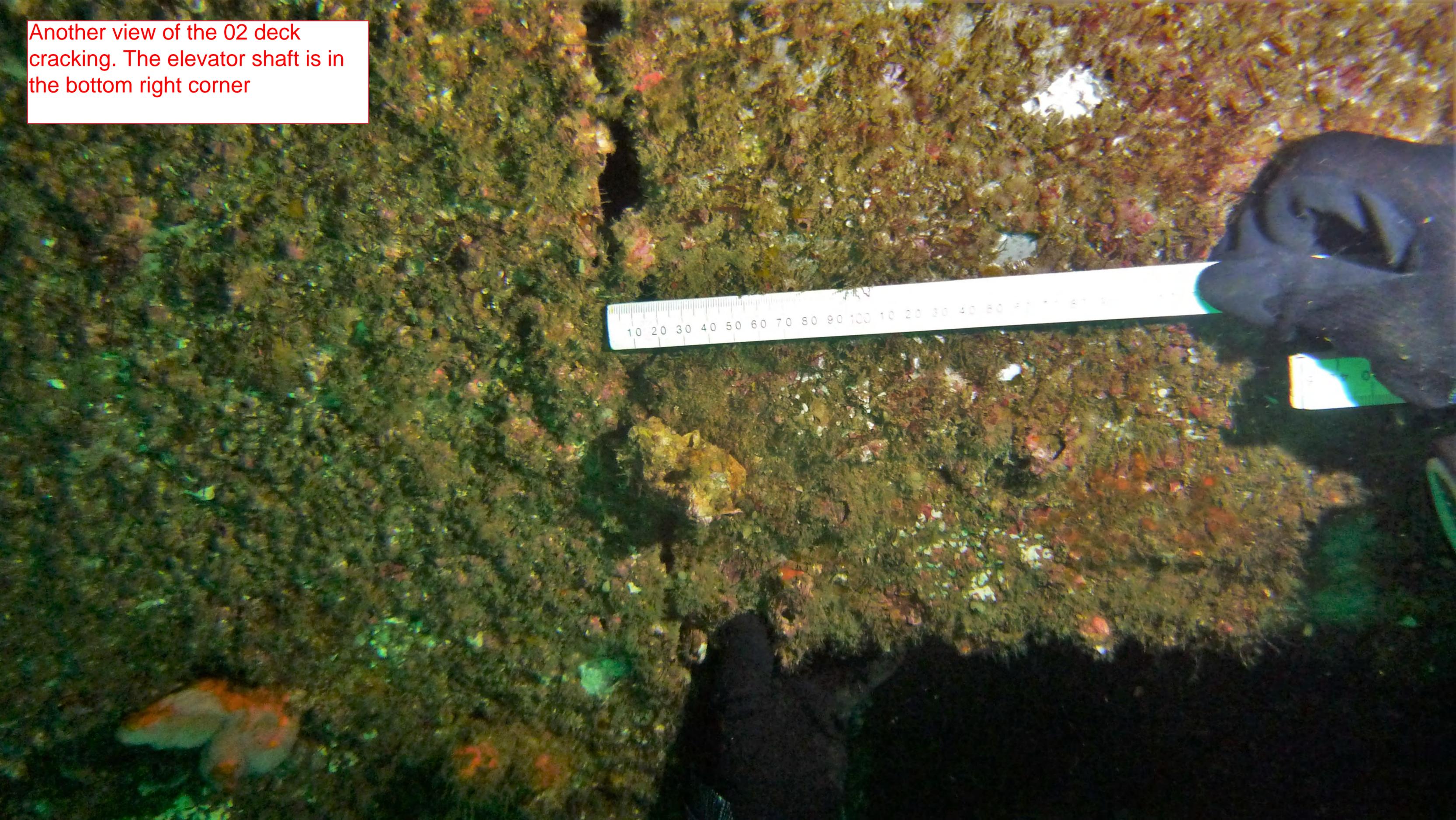
The forward sheild below the bridge. The connection to the main deck shows no signs of separation or cracking



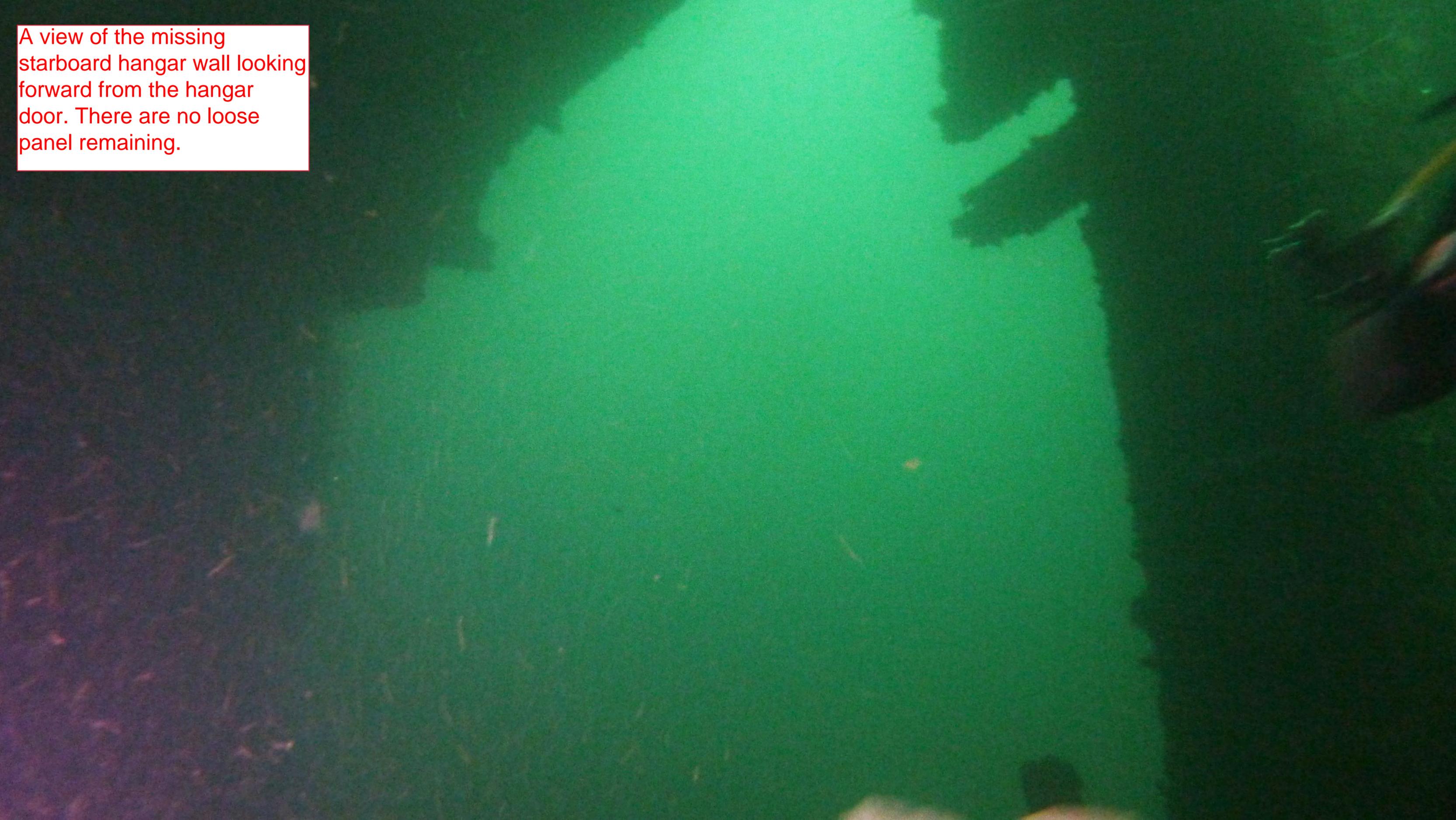
This is a view of the cracking across Deck 02. The crack is well disguised under marine growth and does not appear to be getting any worse



Another view of the 02 deck cracking. The elevator shaft is in the bottom right corner



A view of the missing starboard hangar wall looking forward from the hangar door. There are no loose panel remaining.



The port side hangar wall
looking forward from the
hangar door. It shows no
signs of separating



The centre support column between the hangar doors. It is well secured to the main deck



The starboard support column for the hangar. It is well secured to the main deck



The transom is unchanged since the sinking. All fittings are still intact. The sand level is just over the duck tail.



Port side gunwale on the main deck. There is no sign of deterioration on the main deck





Starboard side gunwale on the main deck. It is heavily encrusted in marine life. No cracking or deformation were observed

The 02 deck has healthy beds of Ecklonia growing on the aluminum deck



All parts of the masts are thickly covered in marine growth



The helicopter deck
has become
colonised with
sponges



The sides of the hull are completely encrusted. There were no tell tale bare patches indicating active corrosion.

