

Bridge Deck / Propulsion

Features identified as a probable charthouse, steering wheel well (Figure 50, Figure 51, Figure 52, Figure 53, Figure 54) were located on the bridge deck. Handrails located in this area (Figure 57); on the well deck (Figure 58) and on the starboard side of the hull below the bridge (Figure 59, Figure 60), along with a ladder on the starboard side (Figure 53) suggest that a steering platform may also have been present above these structure. Figure 109, Figure 110, Figure 111 and Figure 112 show that the *Nemesis* was fitted with a steering platform and steering well in the same area, with a charthouse directly below this feature. The bridge deck and steering platform is also fitted with handrails of a similar design to those found on the seabed and are located in locations which would result in those observed on the wreck/ seabed. The locations and designs the archaeological remains of a rotary lifeboat davits, at least two davit sockets, and four boat cradles; along with the size location and style of a deckhouse (Figure 65, Figure 74, Figure 75) found on the bridge deck on the wreck also conform to those shown in these images.

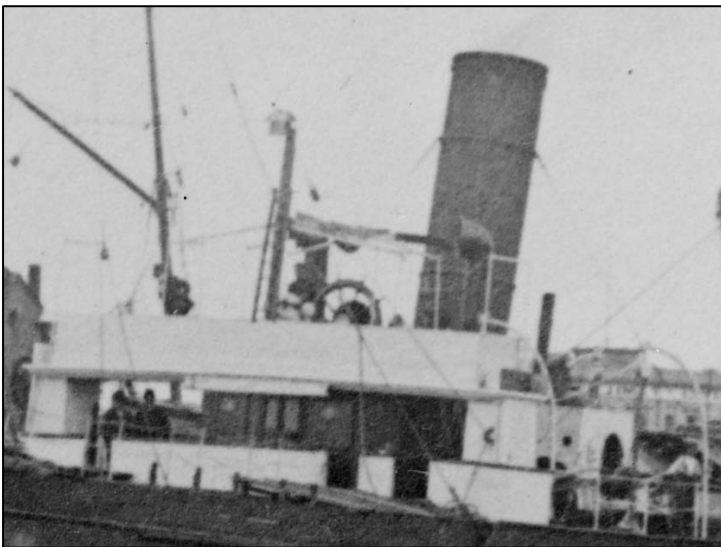


Figure 109: Bridge of the Nemesis (Image: Green c 1900 Nemesis (# gr005471) at Wharf BW v SLV collection gr005471 cropped)

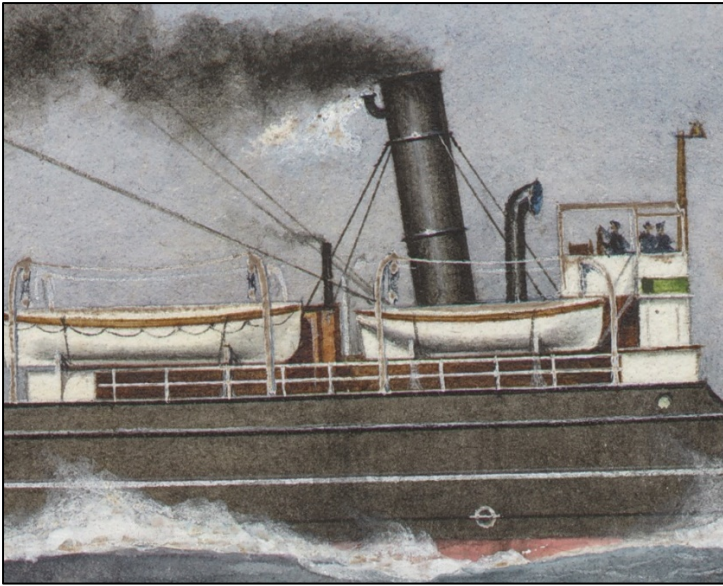


Figure 110: Nemesis painting showing steering platform (1) charthouse (2), handrails (3), stokehold ventilator tubes (4), lifeboat davits (5), lifeboat cradles (6), funnel and deckhouse and chimney (7) (Image: Green c 1900 Nemesis (#wp004986) - Lifeboat Davits Green c 1900 Nemesis SLV wp004986_)

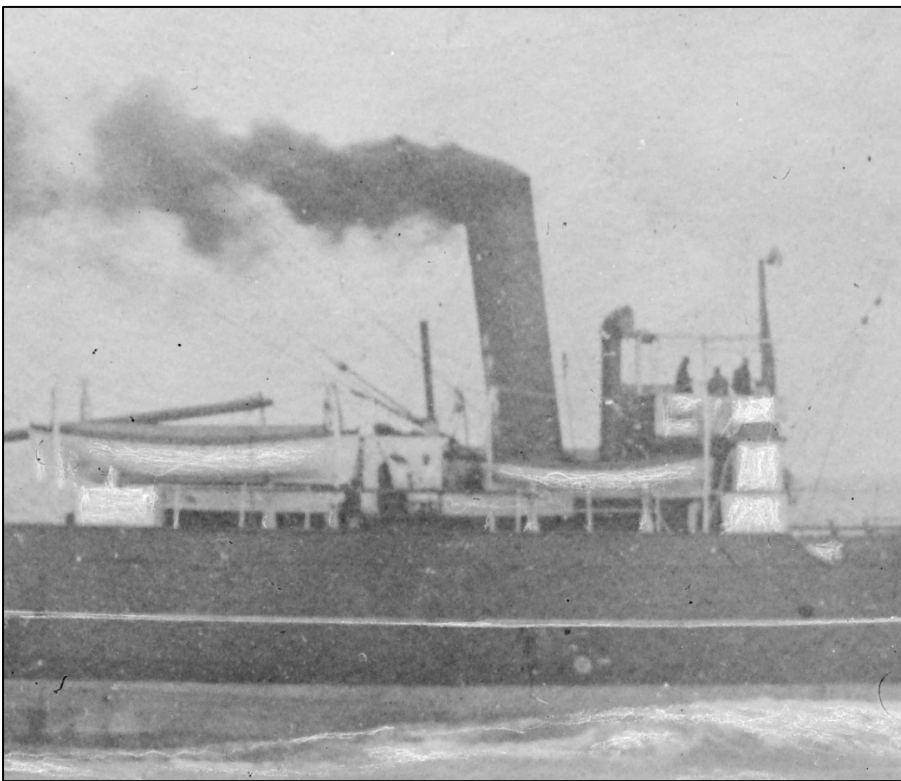


Figure 111: Bridge section photos (Image: Green 1900 (# gr005472) - Bridge Green 1900 BW v slv gr005472)

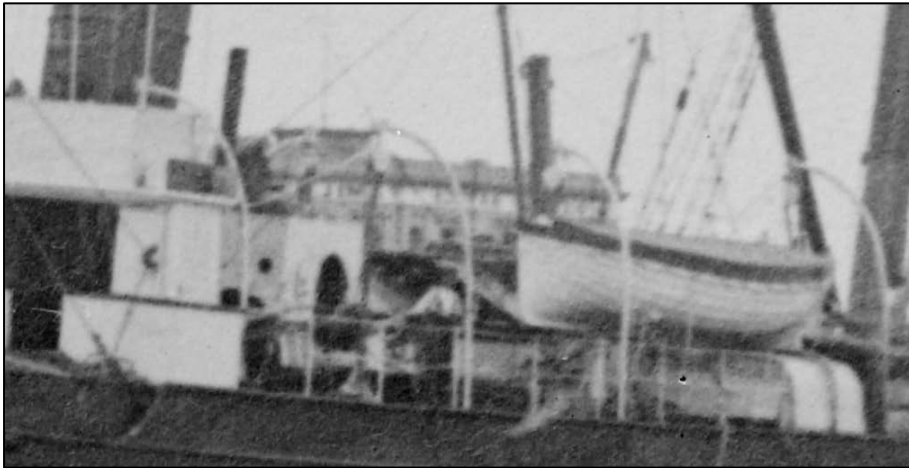


Figure 112: Handrail (Image: Green c 1900 (#gr005471) - Nemesis at Wharf BW v SLV collection cropped)

The wreck was steam powered, as evidenced by the boiler and steam engine. The wreck evidenced what appeared to be an upright compound steam engine or a triple expansion engine located under an engine coaming skylight (Figure 77, Figure 78, Figure 79). Together with the boiler and its associated visible fitting (Figure 69, Figure 70, Figure 71), the bases and holes for two stokehold ventilation pipes match the locations of similar features on images, paintings and construction plans of the *Nemesis* (Figure 109, Figure 110, Figure 113, Figure 114). Historical records show that the *Nemesis* was fitted with a two cylinder compound engine. This type of engine is fitted with one cylinder for high and medium pressures and makes use of at least two different sized cylinders for the final stage of the steam expansion. The engine in this vessel appears to demonstrate at least two large diameter cylinder head covers and tail rods, suggesting that the engine is large compound engine.

Geoff Hewitt (pers comms), a marine engineer and archaeologist offered the following insights:

We should expect a combination of vertical inverted reciprocating machinery (probably originally a compound but not triple expansion as Burrumbeet was the first Huddart Parker ship to have a triple expansion engine in 1884-5 (according to Richards 1987:59) and a scotch fire tube boiler.



Figure 113: Nemesis loading Timber in WA showing the location of the funnel and two stokehold ventilator tubes (Image: SLWA n.d., (R4c) - Nemesis Loading Timber in WA)

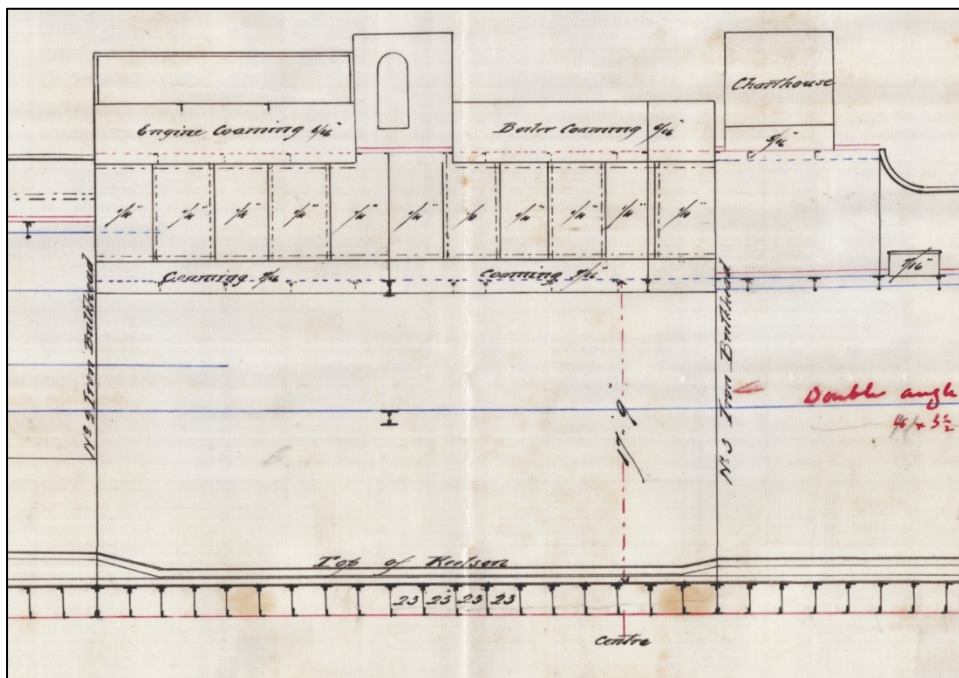


Figure 114: Nemesis construction plan showing engine coaming, deckhouse, boiler coaming and charthouse (Image: Lloyds register Foundation (#LRF-PUN-STK902-0132-P) - Midships Longitudinal Plan LRF-PUN-STK902-0132-P_0001).

Two sets of bits on the port side of the wreck on the bridge deck (Figure 76) conform to the location of a painting stage hanging on the side of the *Nemesis* in c 1900 (Figure 115). The

location of the two supporting ropes suggests that there are two sets of bitts above on the main deck behind the gunnel to which the stage ropes are tied to.

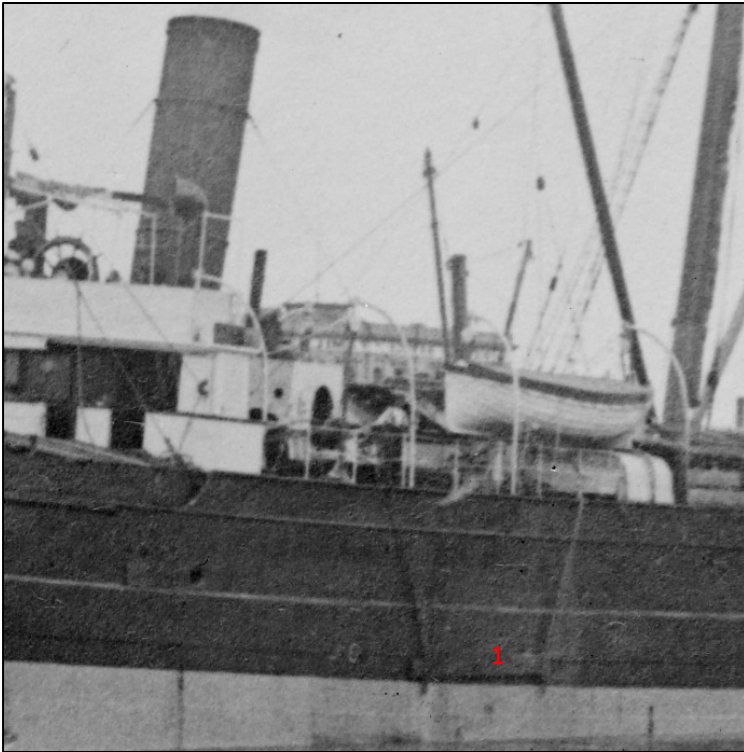


Figure 115: Painting stages secured to bitts on the port side of the Nemesis. Note also the lifeboat davits (Image: Green c 1900 (#gr005471) - Bitt locations Green c 1900 Nemesis at Wharf BW v SLV collection gr005471)

The outside of the hull at the wreck constructed of lapped metal construction and shows that the vessel was made of rivetted plates. At the main deck level, the wreck demonstrates an enlarged outer metal plate running longitudinally down the extant sections of the hull (Figure 83). This main sheer strake is also evident on historic images of the vessel (Figure 115, Figure 116)



Figure 116: Main sheerstrake plating on the hull of the Nemesis (Image: Green c 1900 Nemesis (# wp004986))

Stern main deck

The wreck has evidenced the remains of at least one and possibly two cargo hatchways on the well deck (Figure 37) and one at the stern (Figure 86, Figure 87), This conforms exactly to the hatches shown in longitudinal construction plans for the *Nemesis* (Figure 117). Note that a fourth cargo hatch is shown in the stern section of the vessels which is missing from the wreck. However, the presence of derrick crane fittings in the main hatch

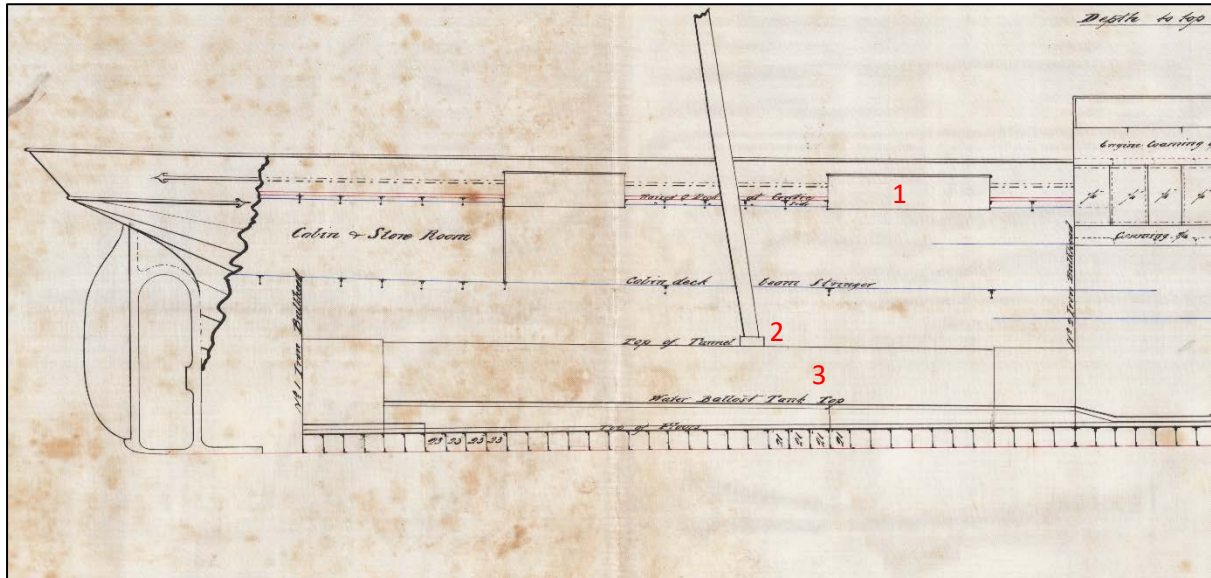


Figure 117: Location of first stern hatch (1). Note location of the stern derrick crane mast step (2) and propeller shaft tunnel (3) (Image: Lloyds register Foundation (#LRF-PUN-STK902-0132-P) - Stern area LRF-PUN-STK902-0132-P_0001)

The remains of the derrick crane evident on the stern of the wreck, which included mast partners, a cargo winch and a possible mast step (Figure 88, Figure 89, Figure 90). Are consistent with the location of an aft derrick crane shown in historical imagery (Figure 118).

As the stern of the vessel is lost, it is impossible to make any further observation of this section of the vessel aside from the extent of the vessel that has been lost. The vessel seems to have disarticulated somewhere behind the first main deck hatchway but before the second hatching. As the mast step still seems to be evident, it appears that the rear of the ship may have carved off diagonally as shown in Figure 119.

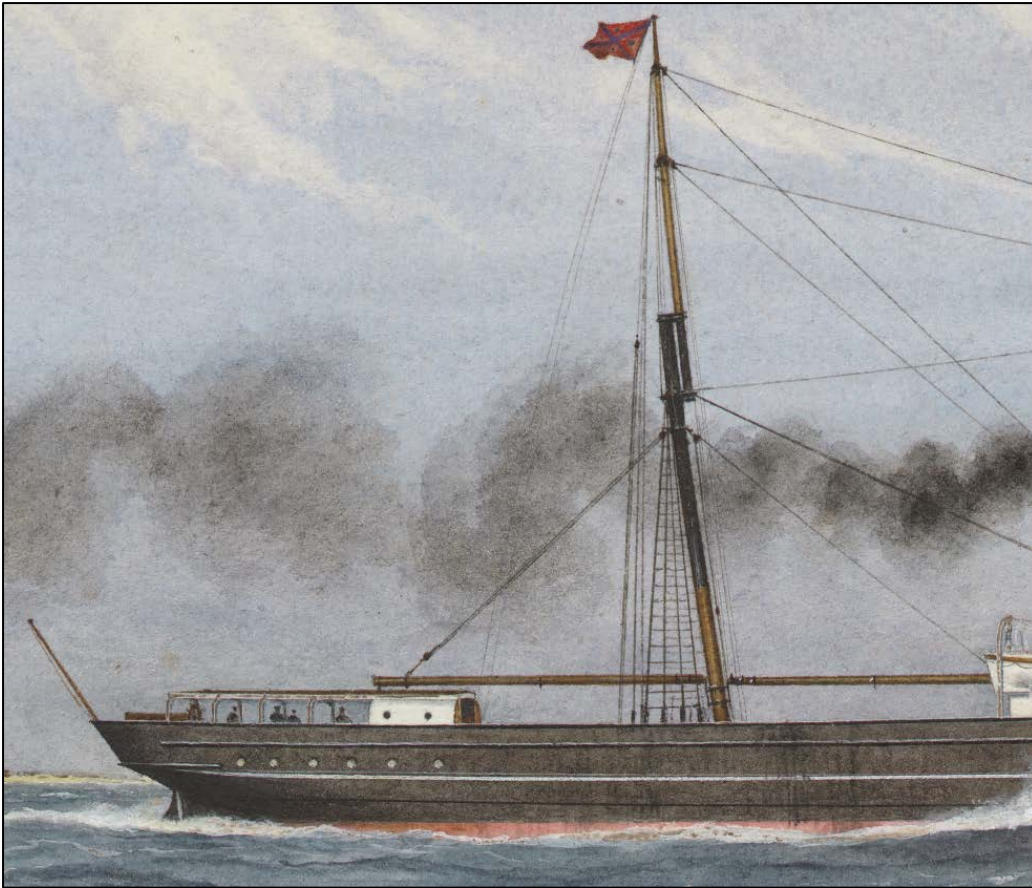


Figure 118: Image showing nemesis in 1900 with a second aft derrick crane setup. The boom over extending to the aft of mast indicates the location of the second aft cargo hatchway. Note the passenger accommodation at the stern and auxiliary direct drive ships wheel (Image: Green c 1900 (# wp004986) - Stern Section - Green c 1900 Nemesis SLV wp004986)

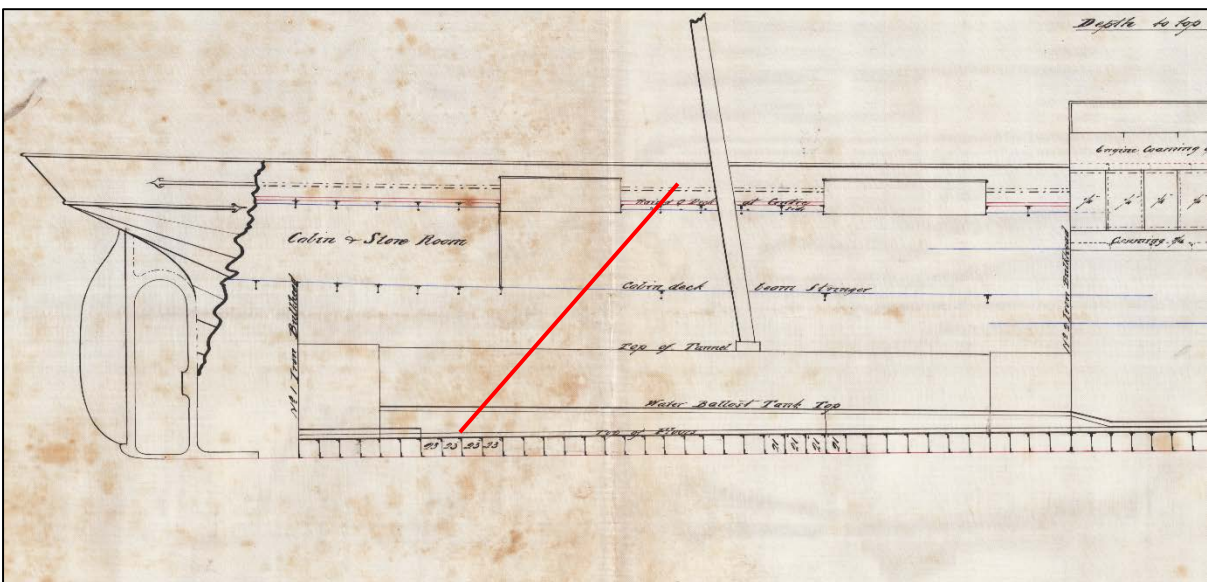


Figure 119: Extent of vessel that seems to be missing aft of red line (Image: Lloyds register Foundation (#LRF-PUN-STK902-0132-P))

Coal

Coal was evident over large areas outside the hull on the port side (Figure 42) inside the vessels inside what is likely a coal bunker (Fig) and in a large debris field at the rear of the wreck where the stern quarter is missing (Figure 91, Figure 92, Figure 93).

The extent of probable coal throughout the wreck indicates that the vessel was probably carrying a cargo of coal in addition to carrying it for fuel. Historical records indicate that *Nemesis* was transporting coal on its last voyage.

3. CONCLUSION

After careful consideration and comparison of the archaeological evidence with historical documentations, it appears highly likely that the wreck may be that of the SS *Nemesis* which sank somewhere off Wollongong in 1904. Although it is highly probable that the wreck discovered is this vessel, definitive proof of its identity was not proven, especially as the design of many ships of the Huddart Parker line were nearly identical. However, the main sheer strake appears to be either a repair or reinforcement plate (possibly used as a rubbing strake. This is highly distinctive and unusual, and it may be this band that positive identifies the vessel as the *Nemesis*.

Further opportunistic inspection of the site is required to further positively identify the vessel, using more specific relics which were not identified in the drop camera footage (e.g. ships plates or other relics with the ship or company logo, or even the ships bell).

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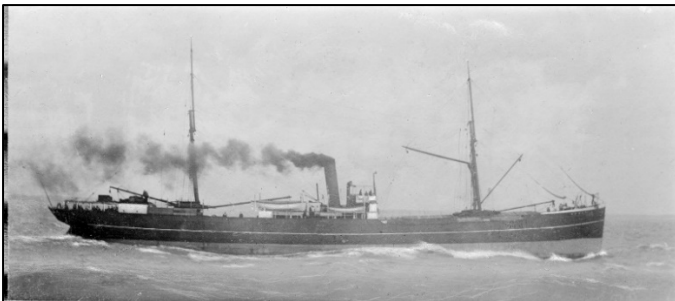
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Images

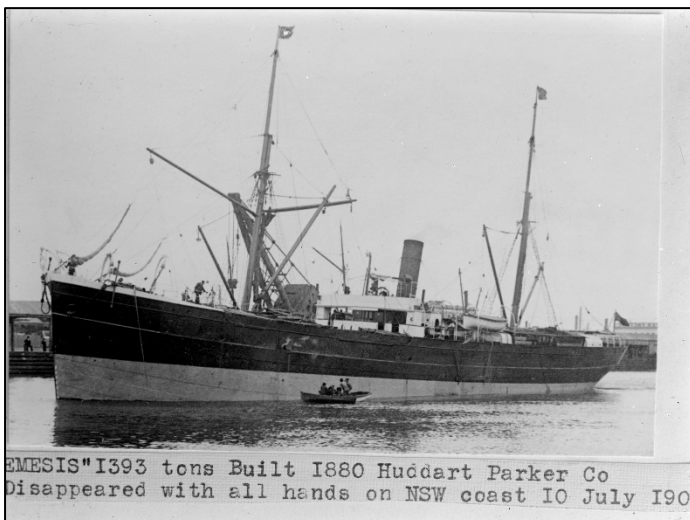
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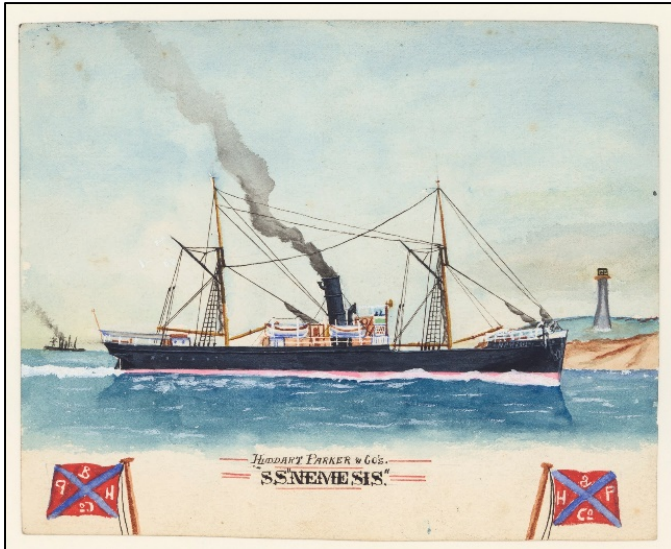
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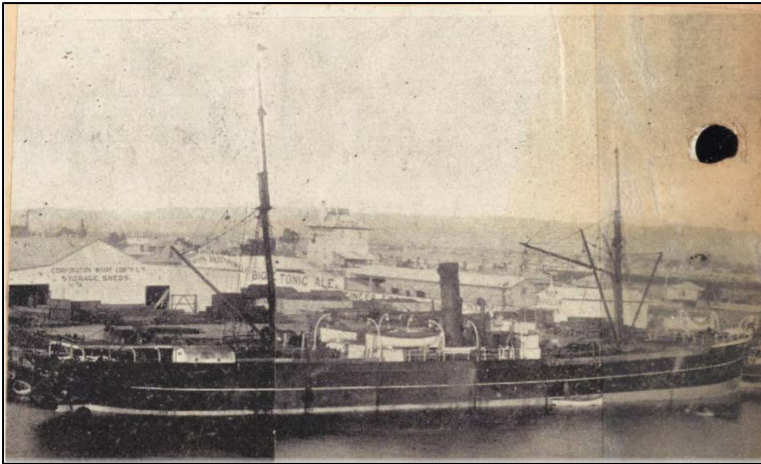
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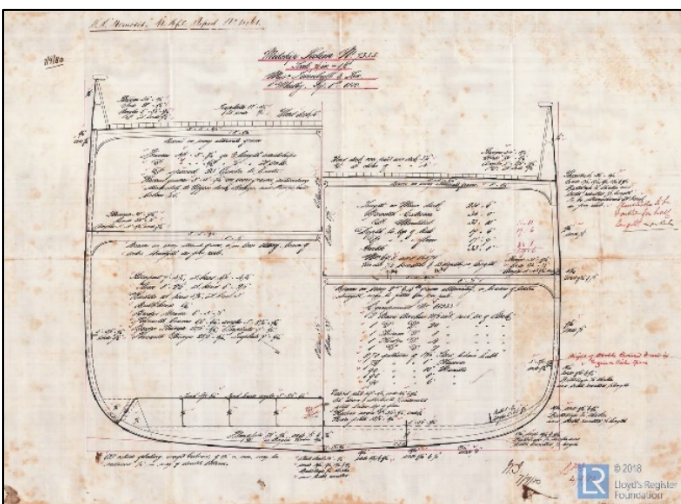


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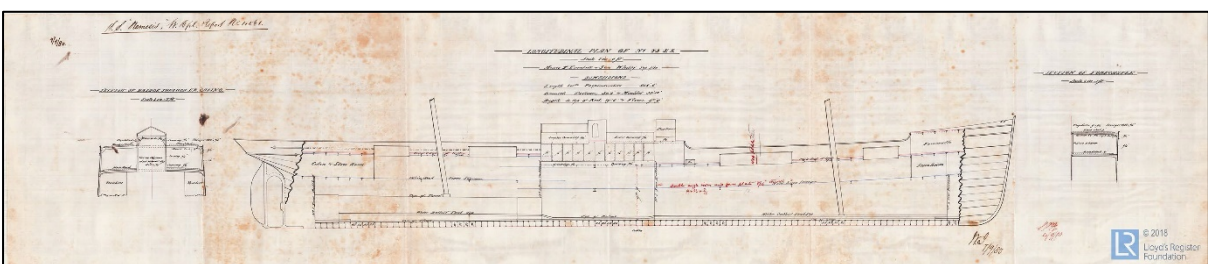
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