

# LLOYD'S REGISTER OF BRITISH AND FOREIGN SHIPPING.

## ENGINEER SURVEYOR'S REPORT ON MACHINERY.

### ENGINES.

Description (2) *Cylindrical Compound mounted Beam*  
 Made by *Yarrow Brothers*  
 When *1870* At *Dundee*  
 Diameter of cylinder *45 1/2* Length of stroke *54*  
 No. of revolutions per minute *(54)*  
 Point of cut off *1/2 stroke*  
 Diameter of screw shaft *13 1/2*  
 Diameter of crank shaft journals *13 1/8 in - Main 14*  
 Diameter of screw, or of paddle wheel *14 feet*  
 Pitch of screw *26 feet*  
 No. of blades, *(4)* Total surface *not ascertained*  
 No. of bilge pumps *(1)* and sizes *6 dia 8 stroke double*  
 Do they pump from each compartment *Eng. Room Main hold, - after hold, fore hold,*

Are all the bilge suction pipes fitted with roses *Yes*  
 No. of feed pumps *(1)* and sizes *6 dia, 8 stroke double action*  
 What gauges are there attached to the engines and boilers ... *(1) Steam Engines (1) on each Boiler (1) Compound (1) Vacuum Engines (1) Vertical double action*  
 Description and size of Donkey Pumps ... *4 1/2 dia, 8 stroke*  
 Where do they pump from *Sea, Engine Room, Fore Main & after holds, also hotwell*  
 No. of bilge injections *(2)* and sizes *(1) 1 1/4 (1) 3 1/2 dia*  
 Are they connected to air, or circulating pumps *circulating*  
 Is there a hand pump in the engine room *Yes, with 40 lb hole*  
 Can it be worked by the main engines *No*  
 Is there a deck hose of sufficient length to reach to any part of the vessel *Yes.*

### MAIN BOILERS.

Number *Two* Description *Cylindrical double ended*  
 Made by *Yarrow Brothers*  
 When *1870* At *Dundee*  
 Working pressure *45 lbs per sq inch*  
 Tested by hydraulic pressure to *120 lbs*, Date *1870*  
 Description of super-heating apparatus *Two horizontal Cylinders*  
 Can each boiler be worked separately *Yes*

Can the super-heater be shut off and the boilers worked separately *No*  
 Description and area of safety valves on each boiler *Two Dead weight 5 dia 30.2 sq inches area*  
 No. of square feet of fire-grate surface in each boiler *50 sq feet*  
 Are there separate blow off and brine cocks on each boiler, independent of those on the vessel's skin *Yes*  
 Are all pipes, cocks, roses, and pumps in connection with the machinery accessible at all times *all except roses in Main & fore holds*

### DONKEY BOILER.

Description *Vertical cylindrical with (2) flueways*  
 Where fixed *Stoke hole*  
 Working pressure *45 lbs per sq inch*

Tested by hydraulic pressure to *not ascertained*, Date *—*  
 Description and area of safety valves *Dead Weight 2 dia - 6.2 area*  
 No. of square feet of fire grate *12 sq. feet*

### PIPES, COCKS, AND CONNECTIONS.

Are all connections with the sea direct on the skin of the ship *Yes*  
 Are they Kingston valves or common cocks ... *(2) Kingston rest common Cocks*  
 Are they fixed sufficiently high on the ship's side to be seen without lifting the stoke hold plates *Except Blow off cocks at level - Engine, Boiler, & ash coals below.*  
 Are the discharge pipes above or below the deep water line *Yes*  
 Are they each fitted with a discharge valve on the plating of the vessel *except Bilge discharge which are high up under deck*  
 Manufacturer.

What pipes are carried through the bunkers *Waste Steam from safety - valves*  
 How are they protected *None (under deck)*  
 When were the stern tube, propeller, screw shaft, and all connections examined in dry dock *Stern tube Oct 1/75 Propeller & connections Oct 1/76*  
 Are the pipes, cocks, and valves arranged so as to prevent an unintentional connection between the sea and the bilge *Yes*  
 Is the screw shaft-tunnel water tight and fitted with a sluice door on bulkhead *No*

I hereby certify that the whole of the above are correct particulars of the Machinery and Boilers of the Iron (or Wood) Screw (or Paddle) Steam Vessel *"Torjo"* owned by *General Steam R. Company* of the Port of *London* of *582* Tons Register, and *260* Registered Horse Power, and that they have been carefully inspected and examined by me at *Deptford* and found to be at this date, viz., *Oct 24* 18*76* in good order and safe working condition.

*H. W. Munnell*  
 Engineer Surveyor to Lloyd's Register of Shipping.