

LLOYD'S REGISTER OF BRITISH AND FOREIGN SHIPPING.

ENGINEER SURVEYOR'S CERTIFICATE.

ENGINES.

Description *Compound Inverted Direct Acting*
 Made by *Hawthorn Compounded by Vict Dock Engine Works*
 In the year *1863 Compounded 1870*
 Present condition *Good*
 Diameter of cylinder *25" & 48"*
 Length of stroke *30"*
 No. of revolutions per minute *About 65*
 Point of cut off *$\frac{3}{8}$ of stroke*
 Paddle, or Screw *Screw*
 Nominal Horse Power *90*
 Diameter of screw, or of paddle wheel *11 ft 3*
 Pitch of screw *at periphery 16 ft 6*
 No. of blades, *3* total surface *43.3 sq ft*
 No. of bilge pumps *2* and size *4" dia 18" stroke Single acting*
 Do they pump from each compartment *From engine room only*
 Is there provision made for pumping from the wings of the stoke hole *From centre only*

Are all the bilge suction pipes fitted with roses *Yes*
 What vacuum and steam gauges are there attached to the engines and boilers *3 Steam 1 Vacuum*
 No. of feed pumps *2* and sizes *4" dia 18" stroke Single acting*
 Description and size of Donkey Engines *1 Vertical double acting pump 4" dia 8" stroke 1 Do Do 1 1/2" dia 14" stroke for ballast tanks & bilges*
 Will it feed the boilers, pump from the bilges, and pump on deck *Yes*
 Can it be driven by steam from a separate boiler *No*
 No. of bilge injections *None* and sizes *n*
 Are they fitted with non return valves *n*
 Is there a hand pump in the engine room *No. Donkey can be used as such*
 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*

CONNECTIONS ON HULL.

Are all connections with the sea direct on the skin of the ship *Yes*
 Are they Kingston valves or common cocks *Kingston on blow off the others common cocks*
 Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehole plates *Yes*
 Are the discharge pipes above or below the deep water line *Above*
 Are they each fitted with a discharge valve on the plating of the vessel *Yes*

Are any pipes carried through the bunkers *No*
 If so state how protected *n*
 When was the stern tube, propeller, screw shaft, and all connections examined in dry dock *1875*
 How are the pipes, cocks, and valves arranged so as to prevent an unintentional connection between the sea and the bilge *Efficient arrangement of cocks and non return valves*
 Have the bilge suctions non-return valves fitted or not *On donkey bilge suction*

BOILERS.

Number *Two*
 Description *Round Multitubular*
 Made by *Victoria Dock Engine Works Coy*
 In the year *1875*
 Present condition *Good*
 When last extensively repaired *n*
 Working pressure *75 lbs*
 When tested by Hydraulic pressure *1875*
 To what pressure tested *Repaired to 100 lbs*
 Any super-heating apparatus *Yes*
 Describe it *Annular*
 Can each boiler be worked separately *Yes*
 Is each boiler fitted with a separate steam gauge *Yes*

Can the super-heater be shut off and the boilers worked separately *No. Steam must pass through Superheater*
 No. of safety valves on each boiler *2 and 1 on Superheater*
 Description and area of each safety valve *Lever weight 3 1/2" dia Area 9.6" Superheater valve 2 1/4" dia Area 3.98*
 No. of square feet of fire-grate surface in each boiler *21.12 sq ft*
 Is there a separate blow off and brine cock on each boiler, independent of those on the vessel's skin *Yes*
 Is the screw shaft tunnel water tight and fitted with a sluice door on bulkhead *No Tunnel*
 Are all pipes, cocks, and roses in connection with these boilers accessible to the engineer at all times *Yes*

In. Victoria Dock Engine Works Coy

L. F. Funnick

I hereby certify that the whole of the above Machinery and Boilers of the Iron (~~or Wood~~) Screw (~~or Paddle~~)
 Steam Vessel *Heepatch* owned by *R. Cory*
 Port of *London* of *728* Tons Register, and *90* Nominal Horse Power,
 have been carefully inspected and examined by me at *Victoria Dock London* and found to be
 at this date, viz., *3rd September 1875* in good order and safe working condition.

James Bain

Engineer Surveyor to Lloyd's Register of Shipping.