

LLOYD'S REGISTER OF BRITISH AND FOREIGN SHIPPING.

ENGINEER SURVEYOR'S REPORT ON MACHINERY.

ENGINES.

Description *Compound Inverted*
 Made by *Palmer's Company*
 When *18/1870* At *Newcastle*
 Diameter of cylinder *25 1/2* Length of stroke *33*
 No. of revolutions per minute *59*
 Point of cut off *2 stroke*
 Diameter of screw shaft *9"*
 Diameter of crank shaft journals *9 1/2*
 Diameter of screw, or of paddle wheel *12 feet*
 Pitch of screw *15 feet mean,*
 No. of blades, *4* Total surface *—*
 No. of bilge pumps *2* and sizes *6" dia x 7 1/2*
 Do they pump from each compartment *& Room only*

Are all the bilge suction pipes fitted with roses *yes*
 No. of feed pumps *2* and sizes *5" dia x 10" stroke*
 What gauges are there attached to the engines and boilers ... *2 Steam 1 Vacuum*
 Description and size of Donkey Pumps ... *1 Large Ballast Donkey 2 4" dia 8" stroke O.A.*
 Where do they pump from ... *1 Sea, Tanks, & R Bilge 2 Sea, & Room Bilge.*
 No. of bilge injections *one* and sizes *8"*
 Are they connected to air, or circulating pumps *Circulating*
 Is there a hand pump in the engine room *yes no. but*
 Can it be worked by the main engines *Donkey can be used.*
 Is there a deck hose of sufficient length to reach to any part of the vessel *yes*

MAIN BOILERS.

Number *Two* Description *Cylindrical*
 Made by *A. & J. Inglis*
 When *18* At *Glasgow*
Box. S. S. Linton
 Working pressure *65 lbs.*
 Tested by hydraulic pressure to *130 lbs.*, Date *—*
 Description of super-heating apparatus *none*
 Can each boiler be worked separately *yes*

Can the super-heater be shut off and the boilers worked separately *none*
 Description and area of safety valves on each boiler ... *Spring valves, total area 19.24 inches*
 No. of square feet of fire-grate surface in each boiler *32 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. *yes.*

DONKEY BOILER.

Description *Vertical*
 Where fixed *Deck*
 Working pressure *30 lbs per sq inch*

Tested by hydraulic pressure to *not ascertained.*
 Description and area of safety valves *Lever & Spring Valves*
 No. of square feet of fire grate *5 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 ... *Cocks & screw down valves.*
 Are they fixed sufficiently high on the ship's side to be seen without lifting the stoke hold plates ... *all but one blow off which is easily accessible*
 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*

What pipes are carried through the bunkers *none*
 How are they protected *—*
 When were the stern tube, propeller, screw shaft, and all connections examined in dry dock *at this survey*
 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 tunnel.*

Manufacturer.

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 *Mid Surrey* owned by *Bacon and Harris* of the Port of *London* of *566* Tons Register, and *99* Registered Horse Power, and that they have been carefully inspected and examined by me at *London* and found to be at this date, viz., *March 13th* 18 *79* in good order and safe working condition.

Amount of Fee for Survey ... *17/3 1/4 £ 4 : 19 : .*(Travelling Expenses, if any, £ *—*)*25 March 1879*

James Mutton & J. Mutton
 Engineer Surveyors to Lloyd's Register of Shipping.
London