

LLOYD'S REGISTER OF BRITISH AND FOREIGN SHIPPING.

ENGINEER SURVEYOR'S REPORT ON MACHINERY.

ENGINES.

Re 3/1/76

Description *Compound, Inverted, Direct Acting*
 Made by *Messrs Napier & Sons*
 When *1876* At *Glasgow*
 Diameter of cylinder *27 1/2 x 47* Length of stroke *33"*
 No. of revolutions per minute *About 80*
 Point of cut off *from 1/16 of stroke*
 Diameter of screw shaft *8 3/8"*
 Diameter of crank shaft journals *8 3/8"*
 Diameter of screw, ~~as per specification~~ *11 1/2"*
 Pitch of screw *14 1/2"*
 No. of blades, *Four* Total surface *33 ft*
 No. of bilge pumps, *Two* and sizes *2 1/2" dia x 18" stroke*
 Do they pump from each compartment *Yes*

Are all the bilge suction pipes fitted with roses *Yes*
 No. of feed pumps *Two* and sizes *2 1/2" 18" stroke*
 What gauges are there attached to the engines and boilers ... *One Vacuum, One Steam & One Compound in Eng. Room & One to each boiler in stokehold*
 Description and size of Donkey Pumps ... *Double Acting 3 1/2 x 7" stroke*
 Where do they pump from ... *From the sea, bilge*
 No. of bilge injections *Two* and sizes *4"*
 Are they connected to air, or circulating pumps *One to circulating & One to air pump*
 Is there a hand pump in the engine room *Yes*
 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 *Round Horizontal*
 Made by *Napier & Sons*
 When *1876* At *Glasgow*
 Working pressure *60 lbs*
 Tested by hydraulic pressure to *120*, Date *14th Mar. 76*
 Description of super-heating apparatus *Round, Annular with single tube*
 Can each boiler be worked separately *Yes*

Can the super-heater be shut off and the boilers worked separately *Yes*
 Description and area of safety valves on each boiler ... *Two, Direct Spring, each 7.67" area*
 No. of square feet of fire-grate surface in each boiler *29.25 ft*
 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 *Round, Vertical*
 Where fixed *On Main Deck*
 Working pressure *5 1/2 lbs*
 Made by *Hawthorn & Coys Leith*

Tested by hydraulic pressure to *Not ascertained* Date *—*
 Description and area of safety valves *7" area (Direct weight)*
 No. of square feet of fire grate *12.56 ft*

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 ... *Screw down Valves & Cocks*
 Are they fixed sufficiently high on the ship's side to be seen without lifting the stoke hold plates ... *They are all fitted above the turn of the bilge*
 Are the discharge pipes above or below the deep water line *Below*
 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 *2nd June 1876*
 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 *Yes*

Messrs R. Napier & Sons Manufacturer.
Alex. Shankie

I hereby certify that the whole of the above are correct particulars of the Machinery and Boilers of the Iron (or Wood) Screw (or Daddle) Steam Vessel *Stettin* owned by *Leith Hull & Hamburg S.S. & F.M. Co.*
 of the Port of *Leith* of *489* Tons Register, and *98* Registered Horse Power,
 and that they have been carefully inspected and examined by me at *Glasgow*
 and found to be at this date, viz., *June 26th 1876* in good order and safe working condition.

James Morrison
 Engineer Surveyor to Lloyd's Register of Shipping.