

LLOYD'S REGISTER OF BRITISH AND FOREIGN SHIPPING.

ENGINEER SURVEYOR'S REPORT ON MACHINERY.

ENGINES.

Recd 8.3.76

Description *Compound Inverted*
 Made by *John Penn & Son*
 When *Feb. 1876* At *Greenwich*
 Diameter of cylinders *28 1/4* Length of stroke *30*
 No. of revolutions per minute *about 90*
 Point of cut off
 Diameter of screw shaft *7 1/2 inches*
 Diameter of crank shaft journals *8 1/2 inches*
 Diameter of screw, or of paddle wheel *10.6*
 Pitch of screw *16.0*
 No. of blades, *3* Total surface
 No. of bilge pumps *2* and sizes *2 3/4 dia, 15" str.*
 Do they pump from each compartment *yes*

Are all the bilge suction pipes fitted with roses *yes*
 No. of feed pumps *2* and sizes *2 3/4 dia, 15" str*
 What gauges are there attached to the engines and boilers ... *one vacuum one steam*
 Description and size of Donkey Pumps ... *(1) 3 1/4 dia x 6" str. single. (2) 3" dia x 6" str. double*
 Where do they pump from ... *(1) feeds the boiler from sea & hot well. (2) pumps from sea, bilge, boiler on deck and through condenser*
 No. of bilge injections *1* and sizes *6"*
 Are they connected to air, or circulating pumps *circulating*
 Is there a hand pump in the engine room *yes*
 Can it be worked by the main engines *no, can be worked from deck*
 Is there a deck hose of sufficient length to reach to any part of the vessel *yes*

MAIN BOILERS.

Number *one*, Description *cylindrical*
 Made by *John Penn & Son*
 When *1876* At *Greenwich*
 Working pressure *60 lbs.*
 Tested by hydraulic pressure to *120 lbs.*, Date *Jan. 1876*
 Description of super-heating apparatus *none*
 Can each boiler be worked separately *only one*

Can the super-heater be shut off and the boilers worked separately *no superheater*
 Description and area of safety valves on each boiler *Spring valves. 31.8 sq inches*
 No. of square feet of fire-grate surface in each boiler
 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 *None fitted*
 Where fixed
 Working pressure

Tested by hydraulic pressure to, Date
 Description and area of safety valves
 No. of square feet of fire grate

PIPES, COCKS, AND CONNECTIONS.

Are all connections with the sea direct on the skin of the ship *no, on brass stand pipes and cast iron boxes*
 Are they Kingston valves or common cocks ... *Cocks.*
 Are they fixed sufficiently high on the ship's side to be seen without lifting the stoke hold plates *not all*
 Are the discharge pipes above or below the deep water line *circulating discharge below, others above*
 Are they each fitted with a discharge valve on the plating of the vessel *bilge discharge is not, but is up close to the deck.*

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 *January 1876.*
 Are the pipes, cocks, and valves arranged so as to prevent an unintentional connection between the sea and the bilge *efficient arrangement*
 Is the screw shaft-tunnel water tight and fitted with a sluice door on bulkhead *yes*

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 *Pandora* owned by *John Penn Esq.*
 of the Port of *London* of *176* Tons Register, and *90* 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 8th* 18 *76* in good order and safe working condition.

James L. Mutton
 Engineer Surveyor to Lloyd's Register of Shipping.