

18591 Iron LLOYD'S REGISTER OF BRITISH AND FOREIGN SHIPPING.

ENGINEER SURVEYOR'S REPORT ON MACHINERY.

ENGINES.

Rev 11/6/77

Report (if any) on Hull of Vessel. Port of London No. 11,688

Description *Smoked Compound Surface Condensing*
 Made by *Mr. G. Clark*
 When *June 1877* At *Sunderland*
 Diameter of cylinder *27 x 50* Length of stroke *36*
 No. of revolutions per minute *about 65*
 Point of cut off *1/2 stroke*
 Diameter of screw shaft *9*
 Diameter of crank shaft journals *9*
 Diameter of screw, or of paddle wheel *12.6*
 Pitch of screw *14.0*
 No. of blades, *4* Total surface *42 sq. ft.*
 No. of bilge pumps *2* and sizes *4 1/4 x 18 stroke*
 Do they pump from each compartment *Engine room. Aft well & fore hold.*

Are all the bilge suction pipes fitted with roses *yes*
 No. of feed pumps *2* and sizes *4 1/4 x 18 stroke*
 What gauges are there attached to the engines and boilers ... *1 steam gauge on each boiler in stokehold, 1 in engine room, 1 vacuum.*
 Description and size of Donkey Pumps ... *2 inverted double acting, large one 8 dia. x 10 stroke, small one 4 x 6 stroke. The large one draws from tanks, sea.*
 Where do they pump from ... *Bilges of engine room. Aft well & fore hold. Small one from sea tanks, fore hold & bilges.*
 No. of bilge injections *one* and sizes *3 1/2 diameter*
 Are they connected to air, or circulating pumps *to circulating*
 Is there a hand pump in the engine room *no (donkey can be used)*
 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 (from iron pipe)*

MAIN BOILERS.

Number *Two* Description *Cylindrical & Multitubular*
 Made by *Mr. G. Clark*
 When *June 1877* At *Sunderland*
 Working pressure *70 lbs per sq. inch*
 Tested by hydraulic pressure to *140 lbs*, Date *April 14/77*
 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
 Description and area of safety valves on each boiler ... *2 spring safety valves 3 1/2 = 19.2 sq. ins. area.*
 No. of square feet of fire-grate surface in each boiler *32.5*
 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 *Upright cylindrical with 3 cross tubes*
 Where fixed *in the stokehold*
 Working pressure *45 lbs per sq. inch*

Tested by hydraulic pressure to *100 lbs (reported)*, Date *April 20/77*
 Description and area of safety valves *1 loaded direct 3 dia = 7.06 sq. ins.*
 No. of square feet of fire grate *12*

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 ... *stop valves & cocks*
 Are they fixed sufficiently high on the ship's side to be seen without lifting the stoke hold plates ... *yes (except water service cock below engine room floor)*
 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 *new*
 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*

Wm. G. Clark Esq. Manufacturer.

Except of the Donkey Boiler I was present on June 4th when steam was raised the engine worked, and the safety valves adjusted & tested all satisfactory. W.A.

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 *"Linden"* owned by *R. B. Avery* of the Port of *London* of *687* Tons Register, and *99* Registered Horse Power, and that they have been carefully inspected and examined by me at *Sunderland*, and found to be at this date, viz., *June 6th 1877* in good order and safe working condition.

Amount of Fee for Survey *£ 4: 19: 5*
 (Travelling Expenses, if any, £ *5: 4*)
 Certificate *Received 7/6/77 HW*

William Allison
 Engineer Surveyor to Lloyd's Register of Shipping

(1000/31/776.)

