

LLOYD'S REGISTER OF BRITISH AND FOREIGN SHIPPING.

ENGINEER SURVEYOR'S REPORT ON MACHINERY. ENGINES.

Rev 11/6/77

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

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 *12 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. bilges of Engine room. Aft well & fore hold. Small one, from sea. tanks, bilge & bilges.*
Where do they pump from ...
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 1/2*
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 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*

Mr. Geo. Clark Esq. Manufacturer.

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 : 6*
(Travelling Expenses, if any, £ *5 : 4*)
Received 7/6/77
W.A.

William Allison
Engineer Surveyor to Lloyd's Register of Shipping