

LLOYD'S REGISTER OF BRITISH AND FOREIGN SHIPPING.

ENGINEER SURVEYOR'S REPORT ON MACHINERY.

ENGINES.

Rec 8/4/98

Description *Compound Engine Surface Condensing*
 Made by *Blair & Co (Lm)*
 When *March 18/98* At *Stockton*
 Diameter of cylinder *20 3/4* Length of stroke *24*
 No. of revolutions per minute *About 70*
 Point of cut off *1/2 stroke*
 Diameter of screw shaft *4"*
 Diameter of crank shaft journals *4" Tunnel shaft 6 1/2 dia*
 Diameter of screw, or of paddle wheel *9.0*
 Pitch of screw *About 10 1/2*
 No. of blades, *4* Total surface *Not ascertained*
 No. of bilge pumps *1* and sizes *3 1/2 x 1 1/2 stroke Single Acting*
 Does it pump from each compartment *From ballast tanks, after well engine room, fore peak - fore hold*
 Are all the bilge suction pipes fitted with roses *Yes*
 No. of feed pumps *1* and sizes *3 1/2 x 1 1/2 stroke Single Acting*
 What gauges are there attached to the engines and boilers ... *2 steam 1 vacuum*
 Description and size of Donkey Pumps ... *One double acting donkey Pump 5 3/4 dia x 8" stroke*
 Where does it pump from *From sea, engine room, ballast tanks fore peak, fore hold - after well*
 No. of bilge injections *1* and sizes
 Are they connected to air, or circulating pump *Circulating Pump*
 Is there a hand pump in the engine room *Donkey work by hand*
 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 *One* Description *Cylindrical Multitubular*
 Made by *Blair & Co (Lm)*
 When *March 18/98* At *Stockton*
 Working pressure *80 lbs*
 Tested by hydraulic pressure to *160 lbs*, Date *14/2/98*
 Description of super-heating apparatus *None*
 Can the super-heater be shut off and the boilers worked separately *No superheater*
 Description and area of safety valves on each boiler *Two spring safety valves Combined area 16.6 sq in*
 No. of square feet of fire-grate surface in each boiler *23.22 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 accessible at all times *All except suction pipes & roses in holds when ship is loaded*
 Can each boiler be worked separately *Only one boiler in ship*

DONKEY BOILER

Description *Vertical Water tubes in furnace*
 Where fixed *In stokehold*
 Working pressure *1/3 lbs*
 Made by *Head, Wroughtons & Co, Stockton*
 Tested by hydraulic pressure to *160 lbs*, Date *21/2/98*
 Description and area of safety valves *Two spring safety valves Combined area 6.2 sq in*
 No. of square feet of fire grate *11.54 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 ... *Stop valves and common cocks*
 Are they fixed sufficiently high on the ship's side to be seen without lifting the stoke hold plates ... *Yes*
 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 *Now*
 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 watertight and fitted with a sluice door on bulkhead *Tunnel not watertight. Sluice door fitted*

Geo Blair & Co & Co Manufacturers of Engines and Main Boilers only
Geo Blair

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 *"Ella"* owned by *J. M. Lennard & Sons* of the Port of *Middlesbrough* of *295.59* Tons Register, and *55* Registered Horse Power, and that they have been carefully inspected and examined by me at *Stockton & Middlesbrough* and found to be at this date, viz., *22nd March 18/98* in good order and safe working condition.

Amount of Fee for Survey ... £2 : 5 : 0
 Certificate (Travelling Expenses, if any, £)

See 4th April 18/98
James Rami

Engineer Surveyor to Lloyd's Register of Shipping.

Wm. Harkiss

This record is putted in accordance
with the Committee's recommendation
that the ship is eligible to have
the notification Lloyd's M.C.
and a machinery certificate
given 22 March 1878

WM
8-4-78



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Foundation