

16178 Iron.

LLOYD'S REGISTER OF BRITISH AND FOREIGN SHIPPING.

ENGINEER SURVEYOR'S REPORT ON MACHINERY.

ENGINES.

Recd 10/4/76

No. 121574
Port Shields
Report (if any) on Hull of Vessel.

Description *Smoked, Compound, Surface Condensing.*
 Made by *Messrs Blair & Co. Limited.*
 When *Feb'y* 18 *76* At *Stockton.*
 Diameter of cylinder *33" x 62" (one off each)* Length of stroke *39 inches.*
 No. of revolutions per minute *about 70.*
 Point of cut off *1/2 stroke.*
 Diameter of screw shaft *10 1/4 inches.*
 Diameter of crank shaft journals *11 inches.*
 Diameter of screw, or of paddle wheel *14" 6."*
 Pitch of screw *16 feet.*
 No. of blades, *4* Total surface *56 sq. feet.*
 No. of bilge pumps *2* and sizes *4" dia. x 28" stroke.*
 Do they pump from each compartment *yes.*

Are all the bilge suction pipes fitted with roses *yes.*
 No. of feed pumps *2* and sizes *4" dia. x 28" stroke.*
 What gauges are there attached to the engines and boilers ... *1 vacuum gauge on Condenser, 1 steam gauge in engine room, and 1 on each boiler in the stokehold.*
 Description and size of Donkey Pumps ... *2 double acting pumps one 7 1/2" dia. x 9" stroke the other 4" dia. x 8" stroke the small one from sea. Bilges and*
 Where do they pump from ... *hotwell. The large one from ballast tanks and bilges.*
 No. of bilge injections *one* and sizes *3 1/2" dia.*
 Are they connected to air, or circulating pumps *to circulating pumps.*
 Is there a hand pump in the engine room *no (donkey can be used as such)*
 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 *Iron pipe on deck, and hose to suit.*

MAIN BOILERS.

Number *2* Description *Cylindrical.*
 Made by *Messrs Blair & Co.*
 When *December* 18 *75* At *Stockton.*
 Working pressure *78 lbs per sq. inch.*
 Tested by hydraulic pressure to *156 lbs*, Date *Decr 1875.*
 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 valves each 3 3/4" dia. = 22 sq. ins.*
 No. of square feet of fire-grate surface in each boiler } *32.*
 Are there separate blow off and brine cocks on each boiler, independent of those on the vessel's skin } *yes. (both into 1 cock on ship's side)*
 Are all pipes, cocks, roses, and pumps in connection with the machinery accessible at all times. *all. except rose of bilge situated in main hold, when the cargo is in.*

DONKEY BOILER. (new)

Description *Vertical, Round, with 3 water tubes in flame.*
 Where fixed *on deck.*
 Working pressure *47 lbs per sq. inch.*

Tested by hydraulic pressure to *90 lbs. (reported)*, Date
 Description and area of safety valves *loaded direct = 8.2 area.*
 No. of square feet of fire grate *14.1 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 ... } *Common stop valves & 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 } *new.*
 Are the pipes, cocks, and valves arranged so as to prevent an unintentional connection between the sea and the bilge } *yes. by non return valves and shell cock with only 1 port in plug.*
 Is the screw shaft-tunnel water tight and fitted with a sluice door on bulkhead } *yes.*

*As Blair & Co. Ltd
G. Blair*

Manufacturer. *except of the donkey boiler.*

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 *"Spartan"* owned by *Edw^d Shotton & Co.*
 of the Port of *London* of *987.06* Tons Register, and *150* Registered Horse Power,

and that they have been carefully inspected and examined by me at *Stockton and Low Walker.*
 and found to be at this date, viz., *March 3rd* 18 *76* in good order and safe working condition.

I was present when steam was up and engines worked at Stockton Jan'y 21st 76. Steam 78. Vacuum 28" revols 75 the engines worked very satisfactory. W. A.

William Allison.
 Engineer Surveyor to Lloyd's Register of Shipping.

(27/1/76.) Survey fee *£3.3.0*

Certificate *5-0*
£3-8-0 Received at Shields by *F. Young*