

LLOYD'S REGISTER OF BRITISH AND FOREIGN SHIPPING.

ENGINEER SURVEYOR'S REPORT ON MACHINERY.

ENGINES.

Rec 10/4/76

No. 1315-4
Port of Shields
Report (if any) on Hull of Vessel.

Description *Marine, Compound, Surface Condensing.*
Made by *Messrs Blair & Co. Limited.*
When *Feb'y* 18 *76* At *Stockton.*
Diameter of cylinder *33" x 62"* Length of stroke *39 inches.*
No. of revolutions per minute *about 70.*
Point of cut off *12 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 hotwell. The large one from ballast tanks and bilges.*
Where do they pump from
No. of bilge injections *one* and sizes *3 1/2" dia.*
Are they connected to air, or circulating pumps *to circulating pump.*
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 18 75.*
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. H. 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. A. 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 3* 18 *76.* in good order and safe working condition.

William Allison.

Engineer Surveyor to Lloyd's Register of Shipping.

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

(27/1/76.)

Survey fee *£3.3.0*

Certificate *5-0*

£3-8-0

Received at Shields by *P. Young* 3