

LLOYD'S REGISTER OF BRITISH AND FOREIGN SHIPPING.

ENGINEER SURVEYOR'S REPORT ON MACHINERY.

ENGINES.

Dec 26/8/78

Port Sunderland No. 12019
Report (if any) on Hull of Vessel.

Description *Inverted Compound Surface Condensing*
 Made by *M. George Clark*
 When *July 1878* At *Sunderland*
 Diameter of cylinders *26" + 4 1/2"* Length of stroke *36"*
 No. of revolutions per minute *40*
 Point of cut off *1/2 Stroke*
 Diameter of screw shaft *8 3/4"*
 Diameter of crank shaft journals *8 3/4"*
 Diameter of screw, ~~or of paddle wheel~~ *10' 9"*
 Pitch of screw *15' 6"*
 No. of blades, *4* Total surface *40 Sq. Feet*
 No. of bilge pumps *1* and sizes *4 1/2" X 18" Stroke*
 Do they pump from each compartment *Tanks, Bilges, & Hold & aft mill*

Are all the bilge suction pipes fitted with roses *Yes*
 No. of feed pumps *1* and sizes *4 1/2" X 18" Stroke*
 What gauges are there attached to the engines and boilers ... } *one Pressure & one Vacuum*
 Description and size of Donkey Pumps ... } *one Double Act. 8" X 10" Stroke*
 } *one " " 4" X 6"*
 } *Large one from Tanks, Bilges, aft*
 Where do they pump from ... } *Mill & through Condenser*
 } *Small one from Sea, Tanks & Hold*
 No. of bilge injections *1* and sizes *4"*
 Are they connected to air, or circulating pumps *To Circulating*
 Is there a hand pump in the engine room *No. the small donkey*
 Can it be worked by the main engines *Can be used by hand*
 Is there a deck hose of sufficient length to reach to any part of the vessel } *Yes from Iron Pipe*

MAIN BOILERS.

Number *1* Description *Circular & Multitubular*
 Made by *M. George Clark*
 When *1875* At *Sunderland*
 Working pressure *65 lbs*
 Tested by hydraulic pressure to _____, Date _____
 Description of super-heating apparatus } *None*
 Can each boiler be worked separately *one boiler*

Can the super-heater be shut off and the boilers worked separately } *one boiler only*
 Description and area of safety valves on each boiler } *2 Spring valves 4 1/2" dia*
 } *by Adams*
 No. of square feet of fire-grate surface in each boiler } *45 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 in connection with the machinery accessible at all times } *All excepting rose in Iron Hold when full*

DONKEY BOILER.

Description *Upright Circular 3 Cross Tubes*
 Where fixed *on Deck*
 Working pressure *40 lbs*

Tested by hydraulic pressure to _____, Date *10/75*
 Description and area of safety valves *1 loaded direct 5.93 Sq. in*
 No. of square feet of fire grate *10 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 & 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 } *Above*
 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 } *Nov. New tube & shaft fitted*
 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 } *Not water tight, fitted with a sluice door*

W. Black Manufacturer.
W. Black & Co.

Except of 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 *S.S. "Middich"* owned by *H. J. Morton* of the Port of *Sunderland* of *561* 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., *July 30th 1878* in good order and safe working condition.

Amount of Fee for Survey ... £ *4:19:*
Certificate
 (Travelling Expenses, if any, £ *5*)

£ *5-14-0*

Received 21/8/78
MW

M. George Clark
 Engineer Surveyor to Lloyd's Register of Shipping.

