

31/3/76
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LLOYD'S REGISTER OF BRITISH AND FOREIGN SHIPPING.

ENGINEER SURVEYOR'S REPORT ON MACHINERY.

ENGINES.

Rev 1/4/76

Description *Vertical Compound S.C.*
Made by *Laid Bros.*
When *March 1876* At *Birkenhead*
Diameter of cylinder *4.0 34"* Length of stroke *33*
No. of revolutions per minute *70*
Point of cut off *Half Stroke*
Diameter of screw shaft *9"*
Diameter of crank shaft journals *9 3/4"*
Diameter of screw, or of paddle wheel *12.3"*
Pitch of screw *16.0"*
No. of blades, *4* Total surface *35 feet*
No. of bilge pumps *1* and sizes *4 1/4 dia x 18" Stroke*
Do they pump from each compartment *Yes*

Are all the bilge suction pipes fitted with roses *Yes*
No. of feed pumps *1* and sizes *4 1/4" dia x 18" Stroke*
What gauges are there attached to the engines and boilers ... *Eng: 1 Steam, 1 Vac & 1 Compound 2 Steam Gauges to Boilers*
Description and size of *1 Vertical Pump, Steam Cyl: 7 1/2*
Donkey Pumps ... *Pump 3 3/4 dia x 7 1/2" Stroke*
Where do they pump from ... *Bilge & Sea*
No. of bilge injections *1* and sizes *5 1/2" dia*
Are they connected to air, or circulating pumps *Are*
Is there a hand pump in the engine room *Yes* *and so fitted that it can be worked either as a feed or bilge pump*
Can it be worked by the main engines *Yes*
Is there a deck hose of sufficient length to reach to any part of the vessel *Yes*

MAIN BOILERS.

Number *2* Description *Circular*
Made by *Laid Bros.*
When *March 1876* At *Birkenhead*
Working pressure *60 lbs*
Tested by hydraulic pressure to *120 lbs*, Date *Dec 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 *No*
Description and area of safety valves on each boiler *2 Spring Valves 12.5 sq ins each*
No. of square feet of fire-grate surface in each boiler *47.25*
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 *Vertical*
Where fixed *In the Boiler Room*
Working pressure *60 lbs*

Tested by hydraulic pressure to *120 lbs*, Date *Feb 1876*
Description and area of safety valves *Weighted 4.9 sq ins*
No. of square feet of fire grate *9.5 sq ft*

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 ... *Kingston for Circ Pump all others Cocks*
Are they fixed sufficiently high on the ship's side to be seen without lifting the stoke hold plates *No*
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 *None*
When were the stern tube, propeller, screw shaft, and all connections examined in dry dock *March 1876*
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*

Manufacturer *Laid Bros.*

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 *"Han Kwang"* owned by *H. J. Smith Bidwell* of the Port of *London* of *838* Tons Register, and *150* Registered Horse Power and that they have been carefully inspected and examined by me at *Birkenhead* and found to be at this date, viz., *31st March 1876* in good order and safe working condition.

Engineer Surveyor to Lloyd's Register of Shipping.