

LLOYD'S REGISTER OF BRITISH AND FOREIGN SHIPPING.

ENGINEER SURVEYOR'S REPORT ON MACHINERY.

ENGINES.

Rec. 17/7/76

Report (if any) on Hull of Vessel. No. 4259
Description *Compound, Inverted, Direct acting*
Made by *James Kincaid Donald & Co*
When 18 *76* At *Greenock*
Diameter of cylinder *17" x 30"* Length of stroke *24"*
No. of revolutions per minute *about 85*
Point of cut off *$\frac{3}{4}$ of stroke*
Diameter of screw shaft *5 $\frac{1}{2}$ "*
Diameter of crank shaft journals *5 $\frac{1}{2}$ "*
Diameter of screw, *and paddle wheel* *10" x 2"*
Pitch of screw *13" x 6"*
No. of blades, *four* Total surface *24 ft*
No. of bilge pumps *One* and sizes *3" x 14" stroke*
Do they pump from each compartment *Yes*

Are all the bilge suction pipes fitted with roses *Yes*
No. of feed pumps *One* and sizes *3" dia x 14" stroke*
What gauges are there attached to the engines and boilers ... *One vacuum & one steam*
Description and size of Donkey Pumps ... *Horizontal double acting 4" x 8" stroke*
Where do they pump from ... *From the sea, bilge, hot well & Ballast Tanks*
No. of bilge injections *One* and sizes *2 $\frac{3}{4}$ "*
Are they connected to air, or circulating pumps *to circulating*
Is there a hand pump in the engine room *Yes, 3 $\frac{1}{2}$ " dia*
Can it be worked by the main engines *worked from Deck*
Is there a deck hose of sufficient length to reach to any part of the vessel *Yes*

MAIN BOILERS.

Number *One* Description *Round Horizontal*
Made by *Wallace & Co*
When 18 *76* At *Glasgow*
Working pressure *65 lbs*
Tested by hydraulic pressure to *130 lbs* Date *April 76*
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 *Yes*
Description and area of safety valves on each boiler *Direct Spring (Two) each 9" x 6" area*
No. of square feet of fire-grate surface in each boiler *36 ft*
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 *Round, Vertical*
Where fixed *In stokehold, at Outside*
Working pressure *35 lbs*

Tested by hydraulic pressure to *40 lbs*, Date *—*
Description and area of safety valves *Over the top*
No. of square feet of fire grate *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 ... *Screw down Valves and Cocks*
Are they fixed sufficiently high on the ship's side to be seen without lifting the stoke hold plates ... *They are*
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 *On Slip previous to being launched*
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*

Kincaid Donald & Co Manufacturers

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 *"Balachava"* owned by *Newcombe & Thomson* of the Port of *London* of *221* Tons Register, and *50* Registered Horse Power, and that they have been carefully inspected and examined by me at *Greenock & Glasgow* and found to be at this date, viz., *June 29th 18 76* in good order and safe working condition.

Lees paid £2.10

James Morrison
Engineer Surveyor to Lloyd's Register of Shipping.