

ENGINEER SURVEYOR'S REPORT ON MACHINERY.
ENGINES.

Rec 1/5/79

Port Glasgow No 4853
Description Compound Inverted Direct Acting
Made by Messrs M. Paul & Coy
When 1879 At Gumbarton
Diameter of cylinder 30 1/4" Length of stroke 36"
No. of revolutions per minute 65
Point of cut off 20"
Diameter of screw shaft 10"
Diameter of crank shaft journals 10"
Diameter of screw, ~~or crank shaft~~ 13 1/2" 6"
Pitch of screw 16 1/2" 3"
No. of blades, ~~four~~ Total surface 53 ft 2 in 4 1/2 sq ft
No. of bilge pumps Two and sizes 5 1/2 dia
Do they pump from each compartment Yes

Are all the bilge suction pipes fitted with roses Yes
No. of feed pumps Two and sizes 6" dia
What gauges are there attached to the engines and boilers ... Three Steam, one Vacuum, one Compound
Description and size of Donkey Pumps ... Double acting 1 1/2 x 9
Where do they pump from ... From the Sea & Bilge
No. of bilge injections Two and sizes 2 3/4" Cocks
Are they connected to air, or circulating pumps To Air
Is there a hand pump in the engine room Yes
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 Yes

MAIN BOILERS.

Number Two Description Round Horizontal
Made by M. Paul & Coy
When 1879 At Gumbarton
Working pressure 70 lbs
Tested by hydraulic pressure to 140 lbs, Date 14.3.79
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 ... Two Direct Spring each 3 1/4" dia
No. of square feet of fire-grate surface in each boiler 32 1/2
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 Storehold
Working pressure 60 lbs

Tested by hydraulic pressure to 120 lbs, Date March 78
Description and area of safety valves One Direct Spring 4" area
No. of square feet of fire grate 14 1/2

PIPES, COCKS, AND CONNECTIONS.

Are all connections with the sea direct on the skin of the ship All except main injection which is fitted on side
Are they Kingston valves or common cocks ... Screw down valves & Cocks
Are they fixed sufficiently high on the ship's side to be seen without lifting the stoke hold plates ... They have now been moved from flat of bottom to upper part of bilge
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 Bilge pipes to Storehold
How are they protected By wood casing
When were the stern tube, propeller, screw shaft, and all connections examined in dry dock April 7 1879
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 Sluice door is fitted on bulkhead the tunnel is open in the bottom

Manufacturer.

I hereby certify that the whole of the above are correct particulars of the Machinery and Boilers of the Iron (and Wood) Screw (and Paddle) Steam Vessel "Behera" owned by J. Silburn of the Port of Glasgow of 1031 Tons Register, and 127 Registered Horse Power, and that they have been carefully inspected and examined by me at Galloway, Gumbarton & Glasgow and found to be at this date, viz., April 25 1879 in good order and safe working condition

Amount of Fee for Survey ... £ 4 : 0 : 0
(Travelling Expenses, if any, £)

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