

RECEIVED FROM
SURVEYOR.

23 APR. 90

2 Drawings (photoprints) attached.
REPORT ON MACHINERY.

SAT 26 APRIL 1890

Port of *Liverpool*

Received at London Office

13

No. *35427*

No. in Survey held at *Liverpool*
Reg. Book.

Date, first Survey *11-13th 89* Last Survey *April 2nd 1890*
(Number of Visits *10*)

on the *Machinery of the S.S. "Purkma". Messrs. Biggar & Co. Ltd.* Tons *17.5M*
Master Built at *Caudouery* By whom built *Messrs. Biggar & Co. Ltd.* When built

Engines made at *Liverpool* By whom made *Messrs. Caudouery & Co. Ltd.* when made *1889*

Boilers made at " By whom made " when made

Registered Horse Power Owners Port belonging to

ENGINES, &c.—

Description of Engines *Inverted Triple Expansion & Cranks*
Diameter of Cylinders *26" 42" 64"* Length of Stroke *67* No. of Rev. per minute Point of Cut off, High Pressure Low Pressure
Diameter of Screw shaft *13 1/2"* Diam. of Tunnel shaft *12 1/2"* Diam. of Crank shaft journals *13 1/2"* Diam. of Crank pin *12 1/2"* size of Crank webs *Reckmann Patent*
Diameter of screw Pitch of screw No. of blades state whether moveable total surface
No. of Feed pumps *2* diameter of ditto *4 1/4"* Stroke *27"* Can one be overhauled while the other is at work
No. of Bilge pumps *2* diameter of ditto *5 1/4"* Stroke *27"* Can one be overhauled while the other is at work
Where do they pump from
No. of Donkey Engines Size of Pumps Where do they pump from

Are all the bilge suction pipes fitted with roses Are the roses always accessible Are the sluices on Engine room bulkheads always accessible

No. of bilge injections and sizes Are they connected to condenser, or to circulating pump

How are the pumps worked

Are all connections with the sea direct on the skin of the ship Are they Valves or Cocks

Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates Are the discharge pipes above or below the deep water line

Are they each fitted with a discharge valve always accessible on the plating of the vessel Are the blow off cocks fitted with a spigot and brass covering plate

What pipes are carried through the bunkers How are they protected

Are all pipes, cocks, valves, and pumps in connection with the machinery accessible at all times

Are the pipes, cocks, and valves arranged so as to prevent an unintentional connection between the sea and the bilges

When were stern tube, propeller, screw shaft, and all connections examined in dry dock

Is the screw shaft tunnel watertight and fitted with a sluice door worked from

BOILERS, &c.—

Number of Boilers *Two* Description *Cylindrical & Horizontal* Whether Steel or Iron *Steel to approved Rating*
Working Pressure Tested by hydraulic pressure to Date of test

Description of superheating apparatus or steam chest

Can each boiler be worked separately Can the superheater be shut off and the boiler worked separately

No. of square feet of fire grate surface in each boiler Description of safety valves No. to each boiler

Area of each valve Are they fitted with easing gear No. of safety valves to superheater area of each valve

Are they fitted with easing gear Smallest distance between boilers and bunkers or woodwork Diameter of boilers

Length of boilers description of riveting of shell long. seams circum. seams Thickness of shell plates

Diameter of rivet holes whether punched or drilled pitch of rivets Lap of plating

Per centage of strength of longitudinal joint working pressure of shell by rules size of manholes in shell

Size of compensating rings No. of Furnaces in each boiler

Outside diameter length, top bottom thickness of plates description of joint if rings are fitted

Greatest length between rings working pressure of furnace by the rules combustion chamber plating, thickness, sides back top

Pitch of stays to ditto, sides back top If stays are fitted with nuts or riveted heads working pressure of plating by

rules Diameter of stays at smallest part working pressure of ditto by rules end plates in steam space, thickness

Pitch of stays to ditto how stays are secured working pressure by rules diameter of stays at

smallest part working pressure by rules Front plates at bottom, thickness Back plates, thickness

Greatest pitch of stays working pressure by rules Diameter of tubes pitch of tubes thickness of tube

plates, front back how stayed pitch of stays width of water spaces

Diameter of Superheater or Steam chest length thickness of plates description of longitudinal joint diam. of rivet holes

Pitch of rivets working pressure of shell by rules diameter of flue thickness of plates If stiffened with rings

Distance between rings working pressure by rules end plates of superheater, or steam chest; thickness how stayed

Superheater or steam chest; how connected to boiler

Description of furnaces

DONKEY BOILER— Description *Cylindrical Multitubular. Used to offload Raising.*
 Made at _____ by whom made _____ when made _____ where fixed _____
 Working pressure _____ tested by hydraulic pressure to _____ No. of Certificate _____ fire grate area _____ description of safety
 valves _____ No. of safety valves _____ area of each _____ if fitted with easing gear _____ if steam from main boilers can
 enter the donkey boiler _____ diameter of donkey boiler _____ length _____ description of riveting _____
 Thickness of shell plates _____ diameter of rivet holes _____ whether punched or drilled _____ pitch of rivets _____ lap of plating _____
 per centage of strength of joint _____ thickness of crown plates _____ stayed by _____
 Diameter of furnace, top _____ bottom _____ length of furnace _____ thickness of plates _____ description of joint _____
 Thickness of furnace crown plates _____ stayed by _____ working pressure of shell by rules _____
 Working pressure of furnace by rules _____ diameter of uptake _____ thickness of plates _____ thickness of water tubes _____

SPARE GEAR. State the articles supplied:—

The foregoing is a correct description,

Manufacturer.

General Remarks (State quality of workmanship, opinions as to class, &c.)

Owing to Messrs Geo Forrester & Co. having gone into liquidation the Machinery and Boilers constructed by them for this vessel have been shipped to Belfast and are to be completed by Messrs MacElevaine & MacColl. of that Port.

Progress of the various parts of the Machinery at date of shipment.
 High & Low Pressure Cylinders Cast and partly machined
 Bedplate machined and bushes for C. shafting fitted.
 Surface Condenser and Columns machined and erected in place
 Crank shafting finished. Intermediate shafting machined
 Thrust & Lined Pistons partly finished. Piston rings machined
 Cylinder covers. High & Inter. Pistons. Piston rods and Levers
 Connecting partly machined

Main Boilers. All shell plating rolled, drilled and fitted together
 All end plates flanged and fitted one end drilled
 Tube plates drilled for tubes and partly fitted to furnaces
 and combustion chambers

Donkey Boiler. Shell plating rolled and ready for drilling
 Furnaces and Combustion Chambers drilled and
 ready for rivetting. end plates flanged

Workmanship and material of good quality. and as far as can be judged
 in my opinion for the class contemplated. It is submitted that the report be
 forwarded to the Surveyor at Belfast for their guidance. M.D. 28-4-90

The amount of Entry Fee .. £ : : received by me,
 Special .. £ : :
 Donkey Boiler Fee .. £ : :
 Certificate (if required) .. £ : : 18
 To be sent as per margin.
 (Travelling Expenses, if any, £)

Committee's Minute LIVERPOOL 25 APR. 90

Transmit to London

Mr. Cheen
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.



Lloyd's Register
 Foundation