

REPORT ON MACHINERY.

5629

No. 5629 Port of Bundee Received at London Office THURS. 27 AUG 1891
 No. in Survey held at Bundee Date, first Survey July 11th Last Survey Aug 14th 1891
 Reg. Book. on the Steel S.S. "Berlin" (Number of Visits 25) Tons 1089
 Master Ayre Built at Bundee By whom built W.B. Thompson & Co. Ld. When built 1891
 Engines made at Bundee By whom made W.B. Thompson & Co. Ld. when made 1891
 Boilers made at Bundee By whom made W.B. Thompson & Co. Ld. when made 1891
 Registered Horse Power 200 250 per day Owners Yorkshire coal & steamship Co. Ltd. Port belonging to Goole

ENGINES, &c.—

Description of Engines Triple expansion - surface condensing
 Diameter of Cylinders 24-38-62 Length of Stroke 42 No. of Rev. per minute 80 Point of Cut off, High Pressure 29" Low Pressure 2 1/2"
 Diameter of Screw shaft 12 1/2" Diam. of Tunnel shaft 12" Diam. of Crank shaft journals 12 1/2" Diam. of Crank pin 12 1/2" size of Crank webs 4 1/2 x 14"
 Diameter of screw 14'-0" Pitch of screw 16'-0" No. of blades 4 state whether moveable no total surface 64 sq ft
 No. of Feed pumps 2 (pairs) diameter of ditto 4-9 Stroke 18" Can one be overhauled while the other is at work yes
 No. of Bilge pumps 2 diameter of ditto 4" Stroke 24" Can one be overhauled while the other is at work yes
 How do they pump from all bilges & discharge overboard
 No. of Donkey Engines 1 worthington Size of Pumps 6 x 4 - 6 Where do they pump from worthington Hotwell, all bilges &
1 Ballast 8 x 10 discharge to boilers, deck & overboard: Ballast pump from sea, tanks & all bilges to condenser & overboard
 Are all the bilge suction pipes fitted with roses yes Are the roses always accessible yes Are the sluices on Engine room bulkheads always accessible yes
 No. of bilge injections one and sizes 5" Are they connected to condenser, or to circulating pump circulating pump
 How are the pumps worked by levers from L.P. Engine - Feed pumps wires patent
 Are all connections with the sea direct on the skin of the ship yes Are they Valves or Cocks both
 Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates yes Are the discharge pipes above or below the deep water line below
 Are they each fitted with a discharge valve always accessible on the plating of the vessel yes Are the blow off cocks fitted with a spigot and brass covering yes
 What pipes are carried through the bunkers suctions How are they protected wood casings
 Are all pipes, cocks, valves, and pumps in connection with the machinery accessible at all times yes
 Are the pipes, cocks, and valves arranged so as to prevent an unintentional connection between the sea and the bilges yes
 When were stern tube, propeller, screw shaft, and all connections examined in dry dock
 Is the screw shaft tunnel watertight yes and fitted with a sluice door yes worked from main deck

BOILERS, &c.—

Number of Boilers 2 Description Circular multitubular Whether Steel or Iron steel (a)
 Working Pressure 160 Tested by hydraulic pressure to 320 lbs Date of test July 13th 1891
 Description of superheating apparatus or steam chest none
 Can each boiler be worked separately yes Can the superheater be shut off and the boiler worked separately ✓
 No. of square feet of fire grate surface in each boiler 55 Description of safety valves spring No. to each boiler 2
 Area of each valve 10.3 Are they fitted with easing gear yes No. of safety valves to superheater ✓ area of each valve ✓
 Are they fitted with easing gear ✓ Smallest distance between boilers and bunkers or woodwork 12" Diameter of boilers 13.9"
 Length of boilers 12'-0" description of riveting of shell long. seams double butt-treble riv circum. seams lap-double riv Thickness of shell plates 1 1/2"
 Diameter of rivet holes 1 1/2" whether punched or drilled drilled pitch of rivets 4.049 Lap of plating 18"
 Per centage of strength of longitudinal joint 84% working pressure of shell by rules 163 size of manholes in shell 17 x 13
 Size of compensating rings 6 1/2 x 1 1/4" No. of Furnaces in each boiler 3 Fox's patent
 Outside diameter 3'-10" length, top 7'-11" bottom 8'-4 3/4" thickness of plates 1 1/2" description of joint welded if rings are fitted ✓
 Greatest length between rings ✓ working pressure of furnace by the rules 162 combustion chamber plating, thickness, sides 3/16" back 1/16" top 1/16"
 Pitch of stays to ditto, sides 1/2" back 1/2" top 3/4" If stays are fitted with nuts or riveted heads nuts working pressure of plating by rules 142
 Diameter of stays at smallest part 1.35 working pressure of ditto by rules 144 end plates in steam space, thickness 1 1/6"
 Pitch of stays to ditto 16" x 15" how stays are secured double nuts working pressure by rules 144 diameter of stays at smallest part 2 3/4"
 working pressure by rules 144 Front plates at bottom, thickness 1 3/16" Back plates, thickness 1 1/6"
 Greatest pitch of stays 12" working pressure by rules ✓ Diameter of tubes 2 1/2" pitch of tubes 3 3/4" x 3 1/4" thickness of tube plates, front 1 3/16" back 1 3/16" how stayed screwed tubes pitch of stays 1 1/4" x 1 1/2" width of water spaces 10 1/4"
 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 ✓

Form No. 8-1890-5/188-T. 65-Compitable Inc.



DUN118-0013

DONKEY BOILER—

Description

Made at _____ by whom made _____ when made _____ where fixed _____
 Working pressure _____ tested by hydraulic pressure to _____ No. of Certificate _____ fire grate area _____
 valves _____ No. of safety valves _____ area of each _____ if fitted with easing gear _____ if steam from ma
 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 plat
 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:— Propeller shaft - after length crank shaft
 2 top end bolts. 2 bottom end bolts. 2 main bearing bolts 6 coupling bolts - 12 pin
 bolts - 12 cylinder cover studs - 2 bilge pump valves - 2 circulating pumps

The foregoing is a correct description,
 B. THOMPSON & Co., Limited.
 S. Howden
 Manufacturer.

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

The machinery of this vessel has been built under special supervision and in accordance with the drawings enclosed.
 The steel has been tested by the Society's surveyors at the steel works & the test certificates are annexed.
 The safety valves of main boilers were set at the working pressure of 100 lbs and engines seen running under steam with satisfactory result.
 The boilers are fitted with Howden's patent forced draught.
 Materials & workmanship are good.

$$\frac{1}{2} \left(\frac{62^2 \times \sqrt{42}}{100} + \frac{4390}{15} \right) = 270 \text{ Horse power.}$$

The machinery is in good & safe working condition and the vessel is in our opinion eligible to be classed in the Register Book with the notation **LC-891**

Handwritten notes:
 At a meeting of the Committee held at the Society's Office on the 25th day of August 1891
 Resolved that the vessel be classed with the notation LC-891

Machinery Certificate Written.

The amount of Entry Fee .. £ 2 : - : - received by me,
 Special £ 33 : 10 : -
 Donkey Boiler Fee £ 3 : - : -
 Certificate (if required) .. £ : : : 25th Aug 1891
 To be sent as per margin.
 (Travelling Expenses, if any, £)

Harry Clarke
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute **FRI 28 AUG 1891**

