

REPORT ON MACHINERY.

Port of MIDDLESBROUGH-ON-TEES.

MON. 2 JUL 1900

Received at London Office 18

No. in Survey held at Middlesbro'-on-Tees Date, first Survey 14 February Last Survey 29 May 1890.

Reg. Book.

(Number of Visits 21)911 896. on the Steel Auxiliary boiler for ^{the} 'Buteshire'Tons Gross 55.44
Net 36.36

Master

Built at NewcastleBy whom built Hawthorn Leslie & Coy. LtdWhen built 1893.Engines made at Newcastle

By whom made

when made 1893.Boilers made at Middlesbro'-on-TeesBy whom made Sir G. Furness, Hartgarth & Coywhen made 1900.Registered Horse Power ✓Owners Edouard S. S. Coy. Ltd (J. Baird & Co.)Port belonging to Glasgow.Nom. Horse Power as per Section 28 ✓Is Refrigerating Machinery fitted Yes.Is Electric Light fitted Yes.

ENGINES, &c.—Description of Engines

No. of Cylinders

No. of Cranks

Dia. of Cylinders as per rule Length of Stroke Revs. per minute Dia. of Screw shaft as per rule Lgth. of stern bush
 Dia. of Tunnel shaft as fitted Dia. of Crank shaft journals as fitted Dia. of Crank pin Size of Crank webs Dia. of thrust shaft under collars
 Dia. of screw Pitch of screw No. of blades State whether moveable Total surface
 No. of Feed pumps Diameter of ditto Stroke Can one be overhauled while the other is at work
 No. of Bilge pumps Diameter of ditto Stroke Can one be overhauled while the other is at work
 No. of Donkey Engines Sizes of Pumps No. and size of Suctions connected to both Bilge and Donkey pumps
 In Engine Room In Holds, &c.
 No. of bilge injections sizes Connected to condenser, or to circulating pump Is a separate donkey suction fitted in Engine room & size
 Are all the bilge suction pipes fitted with roses Are the roses in Engine room always accessible Are the sluices on Engine room bulkheads always accessible
 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 and all boiler mountings accessible at all times
 Are the bilge suction pipes, cocks, and valves arranged so as to prevent any communication 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
 Is it fitted with a watertight door worked from

BOILERS, &c.—

(Letter for record (7))

Total Heating Surface of Boilers 1313Is forced draft fitted No.

No. and Description of Boilers 1. Cyl. built, single ended. Working Pressure 160 lbs. Tested by hydraulic pressure to 320 lbs.
 Date of test 29.5.00 Can each boiler be worked separately ✓ Area of fire grate in each boiler 42.5 No. and Description of safety valves to each boiler 2 Area of each valve 2 1/2 in Pressure to which they are adjusted 160 lb. Are they fitted with easing gear Yes.
 Smallest distance between boilers or uptakes and bunkers or woodwork 18" Mean dia. of boilers 2' 1 1/2" Length 10' 6" Material of shell plates S.
 Thickness 1 1/32" Range of tensile strength 24-32 Are they welded or flanged No. Descrip. of riveting: cir. seams D. P. Lap. long. seams dbl. straps.
 Diameter of rivet holes in long. seams 1 1/16" Pitch of rivets 7 3/8" 2 rows. 3 1/2" Lap of plates on width of butt straps 16" x 1 1/2" thick.
 Per centages of strength of longitudinal joint rivets 84.1 Working pressure of shell by rules 181 lbs. Size of manhole in shell 16" x 12"
 Size of compensating ring 4 1/2" x 1 1/32" No. and Description of Furnaces in each boiler 3. Brighton Material S. Outside diameter 34 1/2"
 Length of plain part top ✓ bottom ✓ Thickness of plates crown ✓ bottom ✓ Description of longitudinal joint weld. No. of strengthening rings 4
 Working pressure of furnace by the rules 164.8 Combustion chamber plates: Material S. Thickness: Sides 9 1/16" Back 9 1/16" Top 9 1/16" Bottom 8 1/8"
 Pitch of stays to ditto: Sides 4 3/4" x 4 1/2" Back 8" x 4 3/4" Top 9" x 4 1/2" If stays are fitted with nuts or riveted heads nuts. Working pressure by rules 160 lbs.
 Material of stays iron. Diameter at smallest part 1 1/2" Area supported by each stay 64.5 Working pressure by rules 220 lbs. and plates in steam space:
 Material S. Thickness 1 1/16" Pitch of stays 14" x 15" How are stays secured S. N. & W. Working pressure by rules 218 lbs. Material of stays S.
 Diameter at smallest part 2 1/2" Area supported by each stay 25.5 Working pressure by rules 192.1 Material of Front plates at bottom S.
 Thickness 3 1/2" Material of Lower back plate S. Thickness 3 1/4" Greatest pitch of stays 11" x 8" Working pressure of plate by rules 210.
 Diameter of tubes 3 1/4" Pitch of tubes 4 1/2" x 4 1/4" Material of tube plates S. Thickness: Front 3 1/32" Back 5 1/8" Mean pitch of stays 8 3/4"
 Pitch across wide water spaces 15" Working pressures by rules 160.3 Girders to Chamber tops: Material S. Depth and thickness of girder at centre 8 1/4" x 1 1/4" Length as per rule 24" Distance apart 9" Number and pitch of Stays in each 2: 7 1/2"
 Working pressure by rules 144.5 Superheater or Steam chest; how connected to boiler None Can the superheater be shut off and the boiler worked separately ✓
 Diameter ✓ Length ✓ Thickness of shell plates ✓ Material ✓ Description of longitudinal joint ✓ Diam. of rivet holes ✓ Pitch of rivets ✓ Working pressure of shell by rules ✓ Diameter of flue ✓ Material of flue plates ✓ Thickness ✓
 If stiffened with rings ✓ Distance between rings ✓ Working pressure by rules ✓ End plates: Thickness ✓ How stayed ✓
 Working pressure of end plates ✓ Area of safety valves to superheater ✓ Are they fitted with easing gear ✓

Is a Report also sent on the Hull of the ship? not, state whether, and when, one will be sent?

1500-991804

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DONKEY BOILER— No. Description

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 Pressure to which they are adjusted If fitted with easing gear If steam from main boilers can enter the donkey boiler

Dia. of donkey boiler Length Material of shell plates Thickness Range of tensile strength

Descrip. of riveting long. seams Dia. of rivet holes Whether punched or drilled Pitch of rivets

Lap of plating Per centage of strength of joint Rivets Thickness of shell crown plates Radius of do. No. of Stays to do.

Dia. of stays. Diameter of furnace Top Bottom Length of furnace Thickness of furnace 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 uptake plates Thickness of water tubes

SPARE GEAR. State the articles supplied:—

The foregoing is a correct description,
FOR SIR CHRISTOPHER FURNESS, WESTGARTH & CO., LD. Manufacturer.

H. Jackson 1900 Feb. 14, 15, 27 Mar. 2, 17, 21, 23, 27, April 2, 4, 10, 19, 23, 30. May 2, 4, 9, 14, 15, 18, 20, 29.
 Dates of Survey { During progress of work in shops - - -
 while building { During erection on board vessel - - -
 Total No. of visits *Twenty-one.* MANAGER.

Is the approved plan of main boiler forwarded herewith ☒

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

This boiler has been built under Special Survey, in accordance with the plan approved in Secretary's letter dated 24.9.99. The materials and workmanship are good. On completion the boiler was examined under an hydraulic pressure of 320 lbs, and found tight and satisfactory.

This boiler has been sent to London, where it will be fitted on board.

The amount of Entry Fee. . . £ : : When applied for,
 Special £ 4 : 4 : 9.6.1900
 Donkey Boiler Fee £ : : When received,
 Travelling Expenses (if any) £ : : 12.6.1900

Committee's Minute

Assigned

Liddle Fowell.
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.



Certificate (if required) to be sent to
 (The Surveys are requested not to write on or below the space for Committee's Minute.)