

REPORT ON MACHINERY.

Port of Sunderland

Received at London Office **TUES. 13 NOV 1900**

No. in Survey held at Sunderland Date, first Survey 22nd May Last Survey 22nd Oct 1900
 Reg. Book. (Sup) on the S. S. "Indian" (No. 640) Tons { Gross 185
 Master W. Hainwood Built at N. Shields By whom built Smiths Dock Co. Ltd When built 1900
 Engines made at Sunderland By whom made N. Eas. Mar. Eng. Co. Ltd when made 1900
 Boilers made at Sunderland By whom made N. Eas. Mar. Eng. Co. Ltd when made 1900
 Registered Horse Power Owners Boston Stm Fishing Co Ltd Port belonging to Boston
 Nom. Horse Power as per Section 28 61 Is Electric Light fitted No

ENGINES, &c.—Description of Engines Triple - Expansion No. of Cylinders 3 No. of Cranks 3
 Diameter of Cylinders 12" 20" 32" Length of Stroke 22 1/2" Revolutions per minute 115 Diameter of Screw shaft as per rule 6 3/4"
 Diameter of Tunnel shaft as fitted 6 1/8" Diameter of Crank shaft journals 6 3/8" Diameter of Crank pin 6 3/8" Size of Crank webs 12 1/2" x 4 1/16"
 Diameter of screw 8'-0" Pitch of screw 11'-0" No. of blades 4 State whether moveable No Total surface 25 sq ft
 No. of Feed pumps 1 Diameter of ditto 2 1/2" Stroke 1'-1 1/2" Can one be overhauled while the other is at work ☒
 No. of Bilge pumps 1 Diameter of ditto 2 1/2" Stroke 1'-1 1/2" Can one be overhauled while the other is at work ☒
 No. of Donkey Engines 2 Sizes of Pumps 4 1/2" x 2 3/4" x 4 1/2" x 3" x 6" No. and size of Suctions connected to both Bilge and Donkey pumps
 In Engine Room 1 of 2" + 1 of 2 1/2" In Holds, &c. Fore Hold 1 of 2"

No. of bilge injections 1 sizes 3" Connected to condenser, or to circulating pump B. P. Is a separate donkey suction fitted in Engine room & size 1 of 2"
 Are all the bilge suction pipes fitted with roses Yes Are the roses in Engine room always accessible Yes Are the sluices on Engine room bulkheads always accessible Yes ~~None~~
 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 above
 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 plate Yes
 What pipes are carried through the bunkers none How are they protected ☒
 Are all pipes, cocks, valves, and pumps in connection with the machinery and all boiler mountings accessible at all times Yes
 Are the bilge suction pipes, cocks, and valves arranged so as to prevent any communication between the sea and the bilges Yes
 When were stern tube, propeller, screw shaft, and all connections examined in dry dock new vessel Is the screw shaft tunnel watertight none
 Is it fitted with a watertight door ☒ worked from ☒

BOILERS, &c.—(Letter for record 2) Total Heating Surface of Boilers 1066 sq ft Is forced draft fitted No
 No. and Description of Boilers 1 Ordinary Marine Type Working Pressure 180 lbs Tested by hydraulic pressure to 360 lbs
 Date of test 13.10.00 Can each boiler be worked separately ☒ Area of fire grate in each boiler 29 sq ft No. and Description of safety valves to
 each boiler 2 Spring Area of each valve 3.14 sq ft Pressure to which they are adjusted 180 lbs Are they fitted
 with easing gear Yes Smallest distance between boilers or uptakes and bunkers or woodwork 12" Mean diameter of boilers 11'-5 1/16"
 Length 9'-6" Material of shell plates S Thickness 5/16" Description of riveting: circum. seams D. R. L long. seams J. R. D. B. S
 Diameter of rivet holes in long. seams 1 1/16" Pitch of rivets 6 5/8" Lap of plates or width of butt straps 16 3/4"
 Per centages of strength of longitudinal joint rivets 84.9 plate 83.96 Working pressure of shell by rules 181 lbs Size of manhole in shell 16" x 12"
 Size of compensating ring 30 x 26 x 5/16" No. and Description of Furnaces in each boiler 2 Plain Material S Outside diameter 3'-4 1/2"
 Length of plain part top 5'-10" bottom 6'-4 1/8" Thickness of plates crown 4 9/16" bottom 6 1/4" Description of longitudinal joint D. B. S No. of strengthening rings ☒
 Working pressure of furnace by the rules 189 lbs Combustion chamber plates: Material S Thickness: Sides 9/32" Back 1/16" Top 9/32" Bottom 1/8"
 Pitch of stays to ditto: Sides 8" x 8" Back 9 1/2" x 9 1/2" Top 8" x 8" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 186 lbs
 Material of stays S Diameter at smallest part 1 7/8" Area supported by each stay 64 sq in Working pressure by rules 215 lbs End plates in steam space:
 Material S Thickness 3/32" Pitch of stays 16" x 15 1/2" How are stays secured D. nuts Working pressure by rules 203 lbs Material of stays S
 Diameter at smallest part 5.05" Area supported by each stay 248 sq in Working pressure by rules 179 lbs Material of Front plates at bottom S
 Thickness 3/16" Material of Lower back plate S Thickness 2 1/32" Greatest pitch of stays 13 1/2" Working pressure of plate by rules 184 lbs
 Diameter of tubes 3 1/4" Pitch of tubes 4 1/2" x 4 7/8" Material of tube plates S Thickness: Front 13/16" Back 13/16" Mean pitch of stays 9" x 9 1/4"
 Pitch across wide water spaces 14" Working pressures by rules 230 lbs Girders to Chamber tops: Material S Depth and
 thickness of girder at centre 7" x 1 1/2" Length as per rule 26" Distance apart 8" Number and pitch of Stays in each 2 of 8"
 Working pressure by rules 195 lbs 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

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 _____ 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 _____ Diameter of donkey boiler _____ Length _____ Material of shell plates _____ Thickness _____
 Description of riveting long. seams _____ Diameter 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:— *Top and bottom end connecting rod bolts and nuts, two main bearing bolts and nuts, one set of coupling bolts, feed and bilge pump valves, bolts, nuts, and iron assorted, propellers*

The foregoing is a correct description,
For and on behalf of the North Eastern Marine Eng^g Co^l Ltd
J. H. Irwin Manufacturer.

Dates of Survey while building
 During progress of work in shops— *1900— May 22. 24. July 24. 26. Augst 28. Sept^r 26. 29. Oct^r 12. 13. 16. 19. 22.*
 During erection on board vessel —
 Total No. of visits *12*

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

ENGINES—Length of stern bush *2'-6"* Diameter of crank shaft journals *as per rule 6.04"* Diameter of thrust shaft under collars *6 3/8"*

BOILERS—Range of tensile strength *29-32* Are they welded or flanged *flanged* **DONKEY BOILERS**—No. ☒ Range of tensile strength ☒

Is the approved plan of main boiler forwarded herewith *No.* Is the approved plan of donkey boiler forwarded herewith ☒

The machinery of this vessel has been constructed under Special Survey, the material and workmanship being good and efficient, and the engines when tried under steam worked satisfactorily.

The main steam pipes have been tested by hydraulic pressure to 400 lbs per square inch.

In my opinion this vessel is eligible for the notification in the Register Book of L. M. C. 10-1900.

It is submitted that this vessel is eligible for THE RECORD, + L M C 10.00.

13.10.00
13.11.00

The amount of Entry Fee... £ *1: 0:* When applied for, *25.10.00*
 Special ... £ *9: 3:*
 Donkey Boiler Fee ... £
 Travelling Expenses (if any) £ *8.11.00* When received.

Committee's Minute *FRI 16 NOV 1900*

Assigned

P. R. Salmon
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.



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