

REPORT ON MACHINERY.

No. 16402.

Port of Hull

Received at London Office JULY 15 NOV 1904

No. in Survey held at Hull Date, first Survey July 16th Last Survey Nov. 5th 1904
 Reg. Book. 20 Supp on the Sc. K. Reliance (Number of Visits 20) Tons Gross 203
Net 84
 Master Selby Built at Selby By whom built Lochrane & Sons When built 1904
 Engines made at Hull By whom made Messrs C. D. Holmes & Co when made 1904
 Boilers made at Hull By whom made Messrs C. D. Holmes & Co when made 1904
 Registered Horse Power 61 Owners E. C. Grant Port belonging to Grimsby
 Nom. Horse Power as per Section 28 61 Is Refrigerating Machinery fitted No Is Electric Light fitted No

ENGINES, &c.—Description of Engines Tri. Compound No. of Cylinders 3 No. of Cranks 3
 Dia. of Cylinders 11 1/2" - 20" - 33" Length of Stroke 24" Revs. per minute 112 Dia. of Screw shaft as per rule 6.9" Material of screw shaft Iron
 Is the screw shaft fitted with a continuous liner the whole length of the stern tube Yes Is the after end of the liner made water tight in the propeller boss Yes If the liner is in more than one length are the joints burned burned If the liner does not fit tightly at the part between the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive If two liners are fitted, is the shaft lapped or protected between the liners Length of stern bush 31
 Dia. of Plain part of shaft as per rule 6.1" Dia. of Crank shaft journals as per rule 6.4" Dia. of Crank pin 6 5/8" Size of Crank webs 12 1/2" x 4 1/4" Dia. of thrust shaft under collars 6 5/8" Dia. of screw 8" - 6" Pitch of screw 11" - 0" No. of blades 4 State whether moveable No Total surface 26 1/2 sq
 No. of Feed pumps 1 Diameter of ditto 2 1/2" Stroke 24" Can one be overhauled while the other is at work Can one be overhauled while the other is at work
 No. of Bilge pumps 1 Diameter of ditto 2 1/2" Stroke 24" Can one be overhauled while the other is at work Can one be overhauled while the other is at work
 No. of Donkey Engines One Sizes of Pumps 3 1/2" x 6" No. and size of Suctions connected to both Bilge and Donkey pumps In Engine Room Two 2" In Holds, &c. One 2" to hold, One 2" to slush well
jector suction, from hold, eng room, bilges & discharge on deck
 No. of bilge injections 1 sizes 3" Connected to condenser, or to circulating pump Is a separate donkey suction fitted in Engine room of size Yes 3"
 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 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 hold suction How are they protected wood casing
 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 before launching Is the screw shaft tunnel watertight None
 Is it fitted with a watertight door worked from

BOILERS, &c.— (Letter for record S.) Total Heating Surface of Boilers 10000 sq Is forced draft fitted No
 No. and Description of Boilers One cyl. Multi. Working Pressure 180 lbs Tested by hydraulic pressure to 360 lbs
 Date of test 20.10.04 Can each boiler be worked separately Area of fire grate in each boiler 30 sq No. and Description of safety valves to each boiler Two Spring Area of each valve 3.98 sq Pressure to which they are adjusted 185 lbs Are they fitted with easing gear Yes
 Smallest distance between boilers or uptakes and bunkers or woodwork 7" Mean dia. of boilers 11' - 6" Length 10' - 0" Material of shell plates Steel
 Thickness 3 1/32" Range of tensile strength 29 - 32 1/2 Are they welded or flanged Descrip. of riveting: cir. seams L. D. long. seams O. B. S. J. R.
 Diameter of rivet holes in long. seams 1 1/32" Pitch of rivets 7 1/8" Lap of plates or width of butt straps 15"
 Per centages of strength of longitudinal joint rivets 90. plate 85.5 Working pressure of shell by rules 188 lbs Size of manhole in shell 16" x 12"
 Size of compensating ring 7" x 3 1/32" No. and Description of Furnaces in each boiler Two Holmes Material Steel Outside diameter 40"
 Length of plain part top bottom Thickness of plates top bottom 7/8" Description of longitudinal joint welded. No. of strengthening rings Holmes Patent
 Working pressure of furnace by the rules 189 lbs Combustion chamber plates: Material Steel Thickness: Sides 1/16" Back 1/16" Top 2/32" Bottom 1/16"
 Pitch of stays to ditto: Sides 8 1/2" x 9" Back 9 1/4" x 9 1/2" Top 8 1/2" If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 193 lbs
 Material of stays Steel Diameter at smallest part 1 1/2" Area supported by each stay 84.4 sq Working pressure by rules 188 lbs End plates in steam space: Material Steel Thickness 1" Pitch of stays 15 3/4" x 15 3/4" How are stays secured O. T. washers Working pressure by rules 190 lbs Material of stays Steel
 Diameter at smallest part 2 23/32" Area supported by each stay 248 sq Working pressure by rules 233 lbs Material of Front plates at bottom Steel
 Thickness 27/32" Material of Lower back plate Steel Thickness 27/32" Greatest pitch of stays 13 1/2" Working pressure of plate by rules 185 lbs
 Diameter of tubes 3 1/4" Pitch of tubes 4 1/2" x 4 1/4" Material of tube plates Steel Thickness: Front 27/32" Back 13/16" Mean pitch of stays 9 1/2"
 Pitch across wide water spaces 14 1/2" Working pressures by rules 180 lbs Girders to Chamber tops: Material Iron Depth and thickness of girder at centre 8 1/2" x 1 3/4" Length as per rule 2' - 9" Distance apart 7 7/8" Number and pitch of Stays in each 3 - 8 1/2"
 Working pressure by rules 180 lbs Superheater or Steam chest; how connected to boiler 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

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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:— Two each, top and bottom end connecting rod, main bearing bolts & nuts, One set coupling bolts
 One set each, feed bilge pump, circulating pump valves, and a quantity of assorted bolts & nuts etc.
 The foregoing is a correct description,
Charles H. Holmes Manufacturer.

Dates of Survey while building { During progress of work in shops - } 1904: July 16. Aug 31. Sep 6. 7. 9. 15. 17. 20. 22. 27. Oct 5. 6. 20. 24. 26. 28. 31.
 { During erection on board vessel - } Nov 1. 3. 5.
 Total No. of visits 20

Is the approved plan of main boiler forwarded herewith *Yes*

General Remarks (State quality of workmanship, opinions as to class, &c. The machinery boiler) of this vessel have been inspected throughout construction, in accordance with the Society's Rules. The workmanship & materials are good. The boiler tested by hydraulic pressure, and with the engines placed on board, tested under steam. They are now in good order, & safe working condition, and respectfully submitted as being eligible in my opinion to be classed, with the notation of * L.M.C. 11.04 in the Register Book.

It is submitted that this vessel is eligible for THE RECORD L.M.C. 11.04

J.M.S.
 15.11.04

Certificate (if required) to be sent to the Committee's Minute.

The amount of Entry Fee..	£ 1 : . . .	When applied for,
Special	£ 9 : 3 : .	10 11 1904
Donkey Boiler Fee .. .	£ . : . . .	When received,
Travelling Expenses (if any) £ . : . . .		30/11/04

J.M.S. James Barclay
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute
 Assigned

FRI. 18 NOV 1904

+ L.M.C. 11.04

MACHINERY CERTIFICATE WRITTEN.



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