

REPORT ON MACHINERY.

No. 63190

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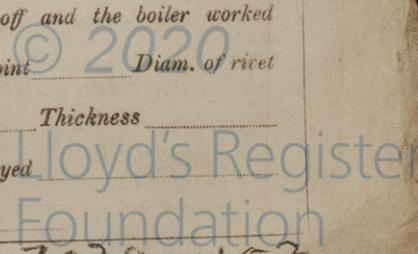
Writing Report 19th Oct 1912 When handed in at Local Office 22nd Oct 1912 Port of **NEWCASTLE - ON - TYNE.**
 in Survey held at **South Shields** Date, First Survey **May 3rd** Last Survey **17th Oct 1912**
 Book. (Number of Visits **38**)
 up on the "**ROBERT HASTIE**" Tons { Gross **210**
 Net **81**
 Master **G. Hays** Built at **South Shields** By whom built **Jos. J. Eltringham & Co** When built **1912**
 Lines made at **South Shields** By whom made **G. J. Grey** when made **1912**
 Deckers made at **South Shields** By whom made **Jos. J. Eltringham & Co** when made **1912**
 Registered Horse Power Owners **R. Hastie & Sons** Port belonging to **N. Shields**
 Indicated Horse Power as per Section 28 **80** Is Refrigerating Machinery fitted for cargo purposes **No** Is Electric Light fitted **No**

GINES, &c.—Description of Engines **Triple Expansion Surface Cond^s** No. of Cylinders **3** No. of Cranks **3**
 No. of Cylinders **13" - 21 1/2" - 35"** Length of Stroke **24"** Revs. per minute **110** Dia. of Screw shaft as per rule **7.69"** Material of screw shaft **Steel**
 as fitted **7 3/4"** Is the after end of the liner made water tight
 the screw shaft fitted with a continuous liner the whole length of the stern tube **No**
 the propeller boss **Yes** If the liner is in more than one length are the joints burned **No** 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 **Yes** If two
 liners are fitted, is the shaft lapped or protected between the liners **No** Length of stern bush **2'-7"**
 Dia. of Thrust shaft as per rule **6.5"** Dia. of Crank shaft journals as per rule **6.83"** Dia. of Crank pin **6 7/8"** Size of Crank webs **13 1/2" x 4 1/2"** Dia. of thrust shaft under
 at after end as fitted **6 5/8"** as fitted **6 7/8"** No. of Blades **4** State whether moveable **No** Total surface **31 sq ft**
 No. of Feed pumps **2** Diameter of ditto **2 1/4"** Stroke **13"** Can one be overhauled while the other is at work **Yes**
 No. of Bilge pumps **2** Diameter of ditto **2 3/8"** Stroke **13"** Can one be overhauled while the other is at work **Yes**
 No. of Donkey Engines **one** Sizes of Pumps **5 1/4" x 3 1/2" x 5"** No. and size of Suctions connected to both Bilge and Donkey pumps
 in Engine Room **one - 2"** In Holds, &c. **one - 2"**

No. of Bilge Injections **1** sizes **3"** Connected to condenser, or to circulating pump **Yes** Is a separate Donkey Suction fitted in Engine room & size **Yes - 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**
 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 **Yes**
 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**
 Dates of examination of completion of fitting of Sea Connections **20-8-12** of Stern Tube **20-8-12** Screw shaft and Propeller **11-9-12**
 Is the Screw Shaft Tunnel watertight **None** Is it fitted with a watertight door **Yes** worked from **Yes**

BOILERS, &c.—(Letter for record) Manufacturers of Steel **See attached report on boiler**
 Total Heating Surface of Boilers **1439 sq ft** Is Forced Draft fitted **No** No. and Description of Boilers **One single ended multi**
 Working Pressure **180 lbs** Tested by hydraulic pressure to **Yes** Date of test **Yes** No. of Certificate **Yes**
 Can each boiler be worked separately **Yes** Area of fire grate in each boiler **52 sq ft** No. and Description of Safety Valves to
 each boiler **Two - spring loaded** Area of each valve **5.94 sq in** 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 **12"** Mean dia. of boilers **Yes** Length **Yes** Material of shell plates
 Thickness **Yes** Range of tensile strength **Yes** Are the shell plates welded or flanged **Yes** Descrip. of riveting: cir. seams **Yes**
 long. seams **Yes** Diameter of rivet holes in long. seams **Yes** Pitch of rivets **Yes** Lap of plates or width of butt straps **Yes**
 Per centages of strength of longitudinal joint rivets **Yes** Working pressure of shell by rules **Yes** Size of manhole in shell **Yes**
 Size of compensating ring **Yes** No. and Description of Furnaces in each boiler **Yes** Material **Yes** Outside diameter **Yes**
 Length of plain part top **Yes** Thickness of plates crown **Yes** Description of longitudinal joint **Yes** No. of strengthening rings **Yes**
 bottom **Yes** Working pressure of furnace by the rules **Yes** Combustion chamber plates: Material **Yes** Thickness: Sides **Yes** Back **Yes** Top **Yes** Bottom **Yes**
 Pitch of stays to ditto: Sides **Yes** Back **Yes** Top **Yes** If stays are fitted with nuts or riveted heads **Yes** Working pressure by rules **Yes**
 Material of stays **Yes** Diameter at smallest part **Yes** Area supported by each stay **Yes** Working pressure by rules **Yes** End plates in steam space:
 Material **Yes** Thickness **Yes** Pitch of stays **Yes** How are stays secured **Yes** Working pressure by rules **Yes** Material of stays **Yes**
 Diameter at smallest part **Yes** Area supported by each stay **Yes** Working pressure by rules **Yes** Material of Front plates at bottom **Yes**
 Thickness **Yes** Material of Lower back plate **Yes** Thickness **Yes** Greatest pitch of stays **Yes** Working pressure of plate by rules **Yes**
 Diameter of tubes **Yes** Pitch of tubes **Yes** Material of tube plates **Yes** Thickness: Front **Yes** Back **Yes** Mean pitch of stays **Yes**
 Pitch across wide water spaces **Yes** Working pressures by rules **Yes** Girders to Chamber tops: Material **Yes** Depth and
 thickness of girder at centre **Yes** Length as per rule **Yes** Distance apart **Yes** Number and pitch of stays in each **Yes**
 Working pressure by rules **Yes** Superheater or Steam chest; how connected to boiler **Yes** Can the superheater be shut off and the boiler worked
 separately **Yes** Diameter **Yes** Length **Yes** Thickness of shell plates **Yes** Material **Yes** Description of longitudinal joint **Yes** Diam. of rivet
 holes **Yes** Pitch of rivets **Yes** Working pressure of shell by rules **Yes** Diameter of flue **Yes** Material of flue plates **Yes** Thickness **Yes**
 If stiffened with rings **Yes** Distance between rings **Yes** Working pressure by rules **Yes** End plates: Thickness **Yes** How stayed **Yes**
 Working pressure of end plates **Yes** Area of safety valves to superheater **Yes** Are they fitted with easing gear **Yes**

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VERTICAL DONKEY BOILER— Manufacturers of Steel

No. _____ Description _____

Made at _____ By whom made _____ When made _____ Where fixed _____

Working pressure tested by hydraulic pressure to _____ Date of test _____ No. of Certificate _____ Fire grate area _____ Description of Safety _____

Valves _____ No. of Safety Valves _____ Area of each _____ Pressure to which they are adjusted _____ Date of adjustment _____

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 _____ Plates _____

Working pressure of shell by rules _____ 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 _____

Working pressure of furnace by rules _____ Thickness of furnace crown plates _____ Radius of do. _____ Stayed by _____

Diameter of uptake _____ Thickness of uptake plates _____ Thickness of water tubes _____ Dates of survey _____

SPARE GEAR. State the articles supplied:— Two top end bolts + nuts; two bottom end bolts + nuts; two main bearing bolts; one set of coupling bolts; one set each of air, feed + bilge pump valves, assorted bolts + nuts + iron

The foregoing is a correct description, *Approved by*
 Manufacturer. *James*

Dates of Survey while building	During progress of work in shops --	1912. May 3. 8. 13. 16. 30. Jun. 4. 6. 10. 13. 19. 24. Jul. 1. 4. 9. 22. Aug. 8. 12. 16. 19. 20. 21.
	During erection on board vessel ---	29. Sep. 3. 9. 14. 17. 20. 23. 25. 26. 27. 30. Oct. 2. 10. 11. 14. 15. 17.
	Total No. of visits	38.

Is the approved plan of main boiler forwarded herewith *Yes*
 " " " donkey " " " *None*

Dates of Examination of principal parts—Cylinders 1-8-12 Slides 29-8-12 Covers 12-8-12 Pistons 22-7-12 Rods 23-8-12
 Connecting rods 23-8-12 Crank shaft 29-8-12 Thrust shaft 3-9-12 Tunnel shafts ✓ Screw shaft 19-8-12 Propeller 16-8-12
 Stern tube 19-8-12 Steam pipes tested 11-10-12 Engine and boiler seatings 11-9-12 Engines holding down bolts 7-10-12
 Completion of pumping arrangements 14-10-12 Boilers fixed 10-10-12 Engines tried under steam 15-10-12
 Main boiler safety valves adjusted 15-10-12 Thickness of adjusting washers P. 3/8" S. 3/8"
 Material of Crank shaft *Steel* Identification Mark on Do. *3111 W.D.H.* Material of Thrust shaft *Steel* Identification Mark on Do. *3850 H.K.*
 Material of Tunnel shafts ✓ Identification Marks on Do. ✓ Material of Screw shafts *Steel* Identification Marks on Do. *7536 K.H.*
 Material of Steam Pipes *Solid drawn copper* ✓ Test pressure *360 lbs per sq. inch* ✓

General Remarks (State quality of workmanship, opinions as to class, &c.)
 The machinery of this vessel has been constructed under special survey, + the materials + workmanship are sound + good. The engines have been tried under steam, + the safety valves adjusted to their working pressure; the machinery is now in a good + safe working condition, + eligible in my opinion to have the notation + L.M.C. 10-12 in the register Book.

It is submitted that this vessel is eligible for THE RECORD + L.M.C. 10-12.
J.W.D. J.H.C.
 29/10/12

Certificate (if required) to be sent to the Surveyors and to be filled in the space for Committee's Minute.

The amount of Entry Fee .. £	1 : 0 : 0	When applied for, OCT 28 1912
Special .. £	12 : 0 : 019.....
Donkey Boiler Fee .. £	:	When received, <i>9.11.12</i>
Travelling Expenses (if any) £	:	

John Houston
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute
 Assigned
 EDINBURGH 1-1912
 + L.M.C. 10-12

