

REPORT ON MACHINERY.

Port of Sunderland

MUN. 6 NOV 1905

Received at London Office 19

No. in Survey held at Sunderland Date, first Survey 4th January, 1905 Last Survey 25th Nov 1905
 Reg. Book. on the Steel Screw Steamer "Collingwood" (Number of Visits 38)
 Master G. M. Harrison Built at Sunderland By whom built Osborne, Graham & Co (Ld) When built 1905
 Engines made at Sunderland By whom made Richardson, Westguth & Co (Ld) when made 1905
 Boilers made at Sunderland By whom made Richardson, Westguth & Co (Ld) when made 1905
 Registered Horse Power _____ Owners Furness Withy & Co. Ltd. Port belonging to Newcastle-on-Tyne
 Nom. Horse Power as per Section 28 154 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted no

ENGINES, &c.—Description of Engines Inverted, Triple Expansion No. of Cylinders Three No. of Cranks Three
 Dia. of Cylinders 18¹/₂ - 30 - 49 Length of Stroke 33 Revs. per minute 45 Dia. of Screw shaft as per rule 10.62 Material of iron
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
the propeller boss yes If the liner is in more than one length are the joints 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 3-4
 Dia. of Tunnel shaft as per rule 9.13 Dia. of Crank shaft journals as per rule 9.6 Dia. of Crank pin 9³/₄ Size of Crank webs 14¹/₂ x 6⁵/₈ Dia. of thrust shaft under
 collars 10 Dia. of screw 13-6 Pitch of screw 14-0 No. of blades four State whether moveable no Total surface 56¹/₂
 No. of Feed pumps Two Diameter of ditto 3 Stroke 18 Can one be overhauled while the other is at work yes
 No. of Bilge pumps Two Diameter of ditto 3 Stroke 18 Can one be overhauled while the other is at work yes
 No. of Donkey Engines Two Sizes of Pumps 11x0 1/2 - 5 1/2 x 3 1/2 x 5 No. and size of Suctions connected to both Bilge and Donkey pumps
 In Engine Room four 2 1/2 in In Holds, &c. Mam. Hold Eng 2 in
after Hold Two 2 in, one 2 1/2 Centre, one 2 1/2 tunnel well
 No. of bilge injections one sizes 4 Connected to condenser, or to circulating pump no Is a separate donkey suction fitted in Engine room & size yes 3 1/2
 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 no
 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 27/9/05 Is the screw shaft tunnel watertight yes
 Is it fitted with a watertight door yes worked from top platform

BOILERS, &c.— (Letter for record S) Total Heating Surface of Boilers 2530 Is forced draft fitted no
 No. and Description of Boilers One single ended, Cyl. Mult. Working Pressure 180 lb Tested by hydraulic pressure to 360 lb
 Date of test 8/6/05 Can each boiler be worked separately — Area of fire grate in each boiler 61 No. and Description of safety valves to
 each boiler Two direct spring Area of each valve 8.29 Pressure to which they are adjusted 185 lb Are they fitted with easing gear yes
 Smallest distance between boilers or uptakes and bunkers or woodwork 15 Mean dia. of boilers 189 1/2 Length 10-6 Material of shell plates steel
 Thickness 1 1/4 Range of tensile strength 28 1/2 to 32 ton Are they welded or flanged no Descrip. of riveting: cir. seams lap D.R. long. seams D.R.S - T.R
 Diameter of rivet holes in long. seams 1 9/32 Pitch of rivets 8 1/8 Lap of plates or width of butt straps 15 1/2
 Per centages of strength of longitudinal joint rievts 86.44 Working pressure of shell by rules 180.3 lb Size of manhole in shell end 16 x 12
 Size of compensating ring flanged No. and Description of Furnaces in each boiler Three, Morrison Material steel Outside diameter 48 3/4
 Length of plain part top — bottom — Thickness of plates top 9 bottom 7 1/2 Description of longitudinal joint weld No. of strengthening rings —
 Working pressure of furnace by the rules 181 lb Combustion chamber plates: Material steel Thickness: Sides 1/8 Back 3/16 Top 1/8 Bottom 13/16
 Pitch of stays to ditto: Sides 10 1/4 x 8 1/2 Back 11 3/4 x 8 1/2 Top 10 x 8 1/2 If stays are fitted with nuts or riveted heads nuts Working pressure by rules 183 lb
 Material of stays steel Diameter at smallest part 1 7/8 + 1 1/2 Area supported by each stay 114 + 100 Working pressure by rules 186.5 lb End plates in steam space:
 Material steel Thickness 1 9/32 Pitch of stays 22 x 18 1/4 How are stays secured D.T. Working pressure by rules 181 lb Material of stays steel
 Diameter at smallest part 3-0 Area supported by each stay 400 Working pressure by rules 180.2 lb Material of Front plates at bottom steel
 Thickness 25/32 Material of Lower back plate steel Thickness 3/4 Greatest pitch of stays 16 3/4 x 8 5/8 Working pressure of plate by rules 219 lb
 Diameter of tubes 3 1/4 Pitch of tubes 4 1/2 x 4 1/4 Material of tube plates steel Thickness: Front 25/32 Back 25/32 Mean pitch of stays 11
 Pitch across wide water spaces 14 1/2 Working pressures by rules 204 lb Girders to Chamber tops: Material steel Depth and
 thickness of girder at centre 9 1/4 x 1 1/2 Length as per rule 29 1/2 Distance apart 10 Number and pitch of Stays in each Two 8 1/2
 Working pressure by rules 186.5 lb 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 —

DONKEY BOILER— No. *one* Description *see report sent herewith*

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 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:— *One set coupling bolts & nuts, two each top end, bottom end & main bearing bolts & nuts, one set each feed & helge pump valves, one propeller, essential bolts & nuts.*

The foregoing is a correct description, **RICHARDSONS, WESTGARTH & CO., LTD**

Manufacturer *Freddie S. Russell* ASSISTANT MANAGER

Dates of Survey while building { During progress of work in shops - - } 1905: Jan, 4, 12, 27, 30, Feb, 17, 24, Mch, 2, 10, 16, 21, 28, 29, Apr, 3, 6, 11, 14, 18, 26, May, 3, 6, 17, 18, 25, 31, June 5, 8, 14, 26, July 5, 26, Sept, 27, 29, Oct, 3, 4, 5, 24
Total No. of visits 38
Is the approved plan of main boiler forwarded herewith *yes*

General Remarks (State quality of workmanship, opinions as to class, &c.)
The Machinery of this Vessel has been constructed under Special Survey, the Boilers & Steam pipes have been tested by Hydraulic pressure to double the working pressure the machinery worked well & the safety valves of the Main & Donkey Boilers have been adjusted to their working pressure & easing gear fitted, the material & workmanship sound & good—

*This Vessel is Eligible in Our Opinion to have the Notation *LMC 10.05 in the Register Book.*

It is submitted that this vessel is eligible for THE RECORD H.L.M.C. 10.05.

W.S.
6.11.05

The amount of Entry Fee.. £ 2 : :
Special .. £ 23 : 11 :
Donkey Boiler Fee .. £ : :
Travelling Expenses (if any) £ : :
When applied for, 4.11.05
When received, 11.11.05

W.S.
6.11.05
W.S. + R.W. Coomber
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute **FRI. 10 NOV 1905**
Assigned *+ Lm 6 10.05*

MACHINERY CERTIFICATE WRITTEN.

