

REPORT ON MACHINERY.

No. 21263

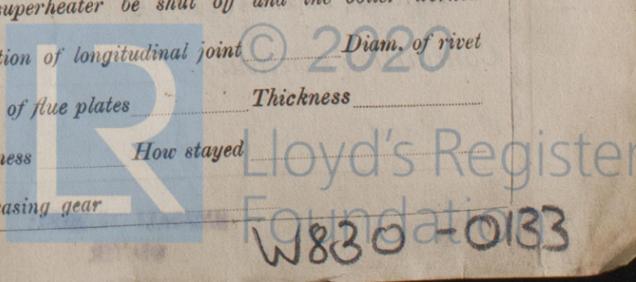
Received at London Office NOV. 8 NOV 1909

Date of writing Report 19... When handed in at Local Office 6. 11. 09 Port of Sunderland
 No. in Survey held at Sunderland Date, First Survey 16 July 09 Last Survey 17th 1909.
 Reg. Book. on the 45 Lady Helen (Number of Visits) Gross 811 Net 419
 Master E. Roberts Built at S. land. By whom built S.P. Austin & Son. When built 1909.
 Engines made at S. land. By whom made H. E. M. Engle when made 1909.
 Boilers made at " By whom made " when made 1909.
 Registered Horse Power 138. Owners Marquis of Londonderry Port belonging to Seaham Harbour Sunderland
 Nom. Horse Power as per Section 28 138. Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted no.

ENGINES, &c.—Description of Engines In C.P. No. of Cylinders 3 No. of Cranks 3
 Dia. of Cylinders 17" 28" 46 Length of Stroke 30 Revs. per minute 88 Dia. of Screw shaft 9.26 Material of screw shaft I
 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 ✓ 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 ✓ Length of stern bush 3' 2"
 Dia. of Tunnel shaft 8.06 Dia. of Crank shaft journals 8.46 Dia. of Crank pin 8.5 Size of Crank webs 13.5 Dia. of thrust shaft under collars 8.5 Dia. of screw 11.8 Pitch of Screw 13 ft. No. of Blades 4 State whether moveable f Total surface 44 sq.
 No. of Feed pumps 2 Diameter of ditto 2 3/4 Stroke 15 Can one be overhauled while the other is at work yes
 No. of Bilge pumps 2 Diameter of ditto 3 Stroke 15 Can one be overhauled while the other is at work yes.
 No. of Donkey Engines 2. Sizes of Pumps 7x9, 9: 5x3 4 1/2. No. and size of Suctions connected to both Bilge and Donkey pumps In Engine Room 3 of 2 1/2. In Holds, &c. 2 of 2 1/2 in each
 No. of Bilge Injections 1 sizes 3 1/2 Connected to circulating pump C.P. Is a separate Donkey Suction fitted in Engine room & size yes 2 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 ✓
 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
 Dates of examination of completion of fitting of Sea Connections 5. 11. 09. of Stern Tube 5. 11. 09. Screw shaft and Propeller 5. 11. 09.
 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) Manufacturers of Steel J. Spencer & Sons
 Total Heating Surface of Boilers 2400 Is Forced Draft fitted no. No. and Description of Boilers one S.E.
 Working Pressure 160 Tested by hydraulic pressure to 320 Date of test 10. 9. 09. No. of Certificate 2782.
 Can each boiler be worked separately ✓ Area of fire grate in each boiler 58 1/2. No. and Description of Safety Valves to each boiler 2 Spring Area of each valve 7.07 Pressure to which they are adjusted 165. Are they fitted with easing gear yes
 Smallest distance between boilers or uptakes and bunkers or woodwork 19" Mean dia. of boilers 15.6 1/2 Length 10. 6' Material of shell plates S
 Thickness 1 3/8 Range of tensile strength 28 1/2 - 32. Are the shell plates welded or flanged each Descrip. of riveting: cir. seams d. r. lap
 long. seams d. butt's Diameter of rivet holes in long. seams 1 3/8 Pitch of rivets 9 1/4 Lap of plates or width of butt straps 18 3/4
 Per centages of strength of longitudinal joint rivets 86.6 Working pressure of shell by rules 161 Size of manhole in shell 16x12"
 Size of compensating ring flanged No. and Description of Furnaces in each boiler 3 Deights Material S Outside diameter 47 1/4
 Length of plain part top Thickness of plates bottom 32 Description of longitudinal joint weld No. of strengthening rings ✓
 Working pressure of furnace by the rules 171. Combustion chamber plates: Material S Thickness: Sides 3/4 Back 3/4 Top 3/4 Bottom 3/4
 Pitch of stays to ditto: Sides 13x8 1/2 Back 11 1/2x10 Top 13x8 1/2 If stays are fitted with nuts or riveted heads nuts Working pressure by rules 16 1/2
 Material of stays S Diameter at smallest part 2.17 Area supported by each stay 117. Working pressure by rules 161. End plates in steam space: Material S Thickness 1 3/8 Pitch of stays 22 1/2x23 1/2 How are stays secured d nuts Working pressure by rules 161. Material of stays S
 Area at smallest part 8.48 Area supported by each stay 531.7 Working pressure by rules 165 Material of Front plates at bottom S
 Thickness 3/4 Material of Lower back plate S Thickness 3/8 Greatest pitch of stays 14 3/8x10 Working pressure of plate by rules 161
 Diameter of tubes 3 1/4 Pitch of tubes 4 1/2x4 1/2 Material of tube plates S Thickness: Front 3/4 Back 3/4 Mean pitch of stays 11 1/2x9
 Pitch across wide water spaces 14 1/2 Working pressures by rules 165. Girders to Chamber tops: Material S Depth and thickness of girder at centre 8 1/2x1 3/4 Length as per rule 29 1/2 Distance apart 13" Number and pitch of stays in each 2 @ 8 1/2"
 Working pressure by rules 166. Superheater or Steam chest; how connected to boiler ✓ Can the superheater be shut off and the boiler worked separately no Description of longitudinal joint ✓ Diam. of rivet holes no Material of flue plates no Thickness no
 If stiffened with rings no Distance between rings no Working pressure by rules no End plates: Thickness no How stayed no
 Working pressure of end plates no Area of safety valves to superheater no Are they fitted with easing gear no

If not, state whether, and when, one will be sent? In a Report also sent on the Hull of the Ship?



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 Sp. in _____

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 _____ Stayed by _____

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

SPARE GEAR. State the articles supplied:— 1 set connecting rod bolts & nuts.
 2 main bearing bolts & nuts, 1 set coupling bolts & nuts.
 1 set feed and bilge pump valves, propeller shaft.
 nuts bolts & assorted iron

NORTH EASTERN MARINE ENGINEERING CO LTD

The foregoing is a correct description,

Manufacturer.

Walter Beattie
 P.M.

Dates of Survey while building	During progress of work in shops - -	1909- July 16. 23. 28. 30 Aug 9. 10. 15. 16. 23. 26 Sept. 1. 10. 16. 21. 24
	During erection on board vessel - -	30 Oct. 5. 13. 14. 15. 19. 20. 27 Nov. 1
	Total No. of visits	24

Is the approved plan of main boiler forwarded herewith yes

" " " donkey " " " yes

Dates of Examination of principal parts—Cylinders	16. 6. 09	Slides	23. 6. 09	Covers	23. 6. 09	Pistons	16. 6. 09	Rods	16. 6. 09
Connecting rods	16. 6. 09	Crank shaft	1. 9. 09	Thrust shaft	1. 9. 09	Tunnel shafts	1. 9. 09	Screw shaft	30. 9. 09
Propeller	30. 9. 09	Stern tube	5. 11. 09	Steam pipes tested	14. 10. 09	Engine and boiler seatings	5. 11. 09	Engines holding down bolts	13. 11. 09
Completion of pumping arrangements	1. 11. 09	Boilers fixed	13. 11. 09	Engines tried under steam	19. 10. 09				
Main boiler safety valves adjusted	19. 10. 09	Thickness of adjusting washers	7/16	A. 3/16					
Material of Crank shaft	S	Identification Mark on Do.	B. J. T. F.	Material of Thrust shaft	S	Identification Mark on Do.	B. J. T. F.		
Material of Tunnel shafts	J.	Identification Marks on Do.	R. J. T. F.	Material of Screw shafts	J.	Identification Marks on Do.	R. J. T. F.		
Material of Steam Pipes	Copper	Test pressure	320 lbs						

General Remarks (State quality of workmanship, opinions as to class, &c. Engines and boilers built under Special Survey. Materials + workmanship good. Engines + boiler examined under full steam + found satisfactory. In my opinion this vessel is eligible for the record. of L.M.C. 11/09

It is submitted that this vessel is eligible for THE RECORD. + L.M.C. 11.09

H.S.D.
 8. 11. 09.

J. Y. Findlay
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

The amount of Entry Fee	£ 2	When applied for,	1 Nov 09
Special	£ 20. 14	When received,	3 Nov 09
Donkey Boiler Fee	£		
Travelling Expenses (if any)	£		

Committee's Minute **FRI. 12 NOV 1909**
 Assigned + L.M.C. 11.09



Certificate (if required) to be sent to _____