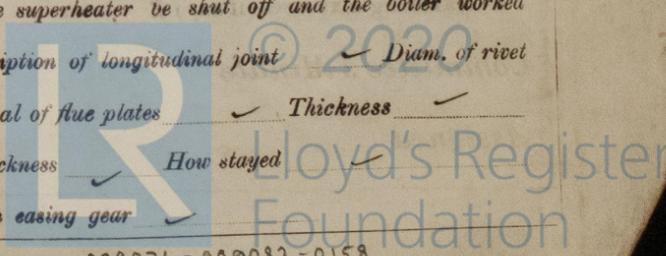


Received at London Office **FRI. MAY. 24. 1912**

of writing Report 19 When handed in at Local Office 14 5 10/2 Port of Sunderland.
 in Survey held at Sunderland. Date, First Survey 30th Jan. 1912 Last Survey 8th May 1912.
 on the S.S. "Wearwood" (Number of Visits 28) Tons Gross 3221
J. A. Roberts Built at Sunderland. By whom built J. Blumer & Coy (211 5/2) When built 1912.
 Lines made at Sunderland. By whom made North Eastern Marine Eng Coy Ltd. 2056 when made 1912.
 Meters made at Sunderland. By whom made North Eastern Marine Eng Coy Ltd. when made 1912.
 Registered Horse Power _____ Owners Constantine & Pictoring Ltd. Port belonging to Middlebrough
 n. Horse Power as per Section 28 244 1/2 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted no

GINES, &c.—Description of Engines Triple expansion. No. of Cylinders Three No. of Cranks Three.
 No. of Cylinders 23 1/2 x 30 x 64 Length of Stroke 42 Revs. per minute 64. Dia. of Screw shaft 12 3/4 as per rule 12 3/4 Material of screw shaft Steel
 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
 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
 shafts are fitted, is the shaft lapped or protected between the liners _____ Length of stern bush 4'-9"
 Dia. of Tunnel shaft 11-6 as per rule 11-6 Dia. of Crank shaft journals 12-2 1/4 as per rule 12-2 1/4 Dia. of Crank pin 12 3/8 Size of Crank webs 19 x 1 1/2 Dia. of thrust shaft under
 bars 12 3/4 Dia. of screw 16-9 Pitch of Screw 16-9 No. of Blades 4. State whether moveable no. Total surface 90 f.
 No. of Feed pumps 2. Diameter of ditto 3 1/4 Stroke 24 Can one be overhauled while the other is at work yes.
 No. of Bilge pumps 2. Diameter of ditto 4 Stroke 24 Can one be overhauled while the other is at work yes.
 No. of Donkey Engines Two. Sizes of Pumps 4" x 9" Ballast; 6" x 6" Feed. No. and size of Suctions connected to both Bilge and Donkey pumps
 Engine Room Three @ 3 1/2" dia. In Holds, &c. 2 @ 3 1/2" dia in both fore holds, aft hold
@ 3 1/2" dia fore & 1 @ 3 1/2" dia in aft well. Tunnel well 1 @ 3" dia.
 No. of Bilge Injections two sizes 5" Connected to condenser, or to circulating pump C.P. 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.
 How are they protected _____ 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 24-3-12. of Stern Tube 30-4-12 Screw shaft and Propeller 30-4-12.
 the Screw Shaft Tunnel watertight yes. Is it fitted with a watertight door yes. worked from top platform.

MILLERS, &c.—(Letter for record) (61.) Manufacturers of Steel J. Spence & Sons. Ltd.
 Total Heating Surface of Boilers 4120. Is Forced Draft fitted no. No. and Description of Boilers Two single ended.
 Working Pressure 180 lbs. Tested by hydraulic pressure to 360 lbs. Date of test 15-4-12. No. of Certificate 3004.
 Can each boiler be worked separately yes. Area of fire grate in each boiler 51 1/2 f. No. and Description of Safety Valves to
 each boiler Two spring loaded. Area of each valve 5.94 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 24" Mean dia. of boilers 15'-3" Length 10'-3" Material of shell plates Steel.
 Thickness 1 1/2" Range of tensile strength 28 3/4 x 32 tons Are the shell plates welded or flanged no. Descrip. of riveting: cir. seams D.R.
 g. seams T.R.D.B.S. Diameter of rivet holes in long. seams 1 1/2" Pitch of rivets 9 1/2" Lap of plates or width of butt straps 19 1/2"
 Percentages of strength of longitudinal joint rivets 86 Working pressure of shell by rules 180.4 lbs. Size of manhole in shell 16" x 12"
 plate 86.5 No. and Description of Furnaces in each boiler Three Cor. Material Steel Outside diameter 45 3/8"
 Length of plain part top _____ bottom _____ Thickness of plates crown 1 1/4" Description of longitudinal joint weld. No. of strengthening rings ✓
 Working pressure of furnace by the rules 180 lbs. Combustion chamber plates: Material Steel. Thickness: Sides 25 3/8" Back 25 3/8" Top 25 3/8" Bottom 25 3/8"
 Pitch of stays to ditto: Sides 12 1/2" x 8 3/8" Back 11" x 10 1/8" Top 12" x 8 3/8" If stays are fitted with nuts or riveted heads Nuts. Working pressure by rules 180.4 lbs.
 Material of stays Steel Diameter at smallest part 2-1" Area supported by each stay 104.4 sq. Working pressure by rules 181 lbs. End plates in steam space:
 Material Steel Thickness 1 1/16" Pitch of stays 22" x 20 1/2" How are stays secured D.N. Wash. Working pressure by rules 180 lbs. Material of stays Steel
 Diameter at smallest part 8-29" Area supported by each stay 451 sq. Working pressure by rules 191 lbs. Material of Front plates at bottom Steel
 Thickness 3/4" Material of Lower back plate Steel Thickness 29 3/8" Greatest pitch of stays 14 1/2" x 10 5/8" Working pressure of plate by rules 181 lbs.
 Diameter of tubes 3 1/4" Pitch of tubes 11 1/2" x 11 3/4" Material of tube plates Steel Thickness: Front 3/4" Back 3/4" Mean pitch of stays 10 1/2"
 Pitch across wide water spaces 14 1/2" Working pressures by rules 192 lbs. 183 lbs. Girders to Chamber tops: Material Steel Depth and
 thickness of girder at centre 2 @ 8 1/4" x 1 1/2" Length as per rule 31" Distance apart 12" Number and pitch of stays in each 2 @ 8 3/8"
 Working pressure by rules 183 lbs. Superheater or Steam chest; how connected to boiler how. 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
 plates _____ Pitch of rivets _____ Working pressure of shell by rules _____ Diameter of flue _____ Material of flue plates _____ Thickness _____
 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 _____



VERTICAL DONKEY BOILER — Manufacturers of Steel

No.	Description		When made	Where fixed
Made at	By whom made			
Working pressure	tested by hydraulic pressure to	Date of test	No. of Certificate	Fire grate area
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
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 each bolts & nuts for top & bottom ends & main bearings. One set coupling bolts. One set each valves for all pumps. One tail shaft. 6 Condenser tubes, 6 Piston tubes. Assorted bolts nuts & riv.

The foregoing is a correct description,

Manufacturer.

per pro NORTH EASTERN MARINE ENGINEERING S. T. Harrison

Dates of Survey while building: During progress of work in shops --- 1911 Jan 30, Feb 2, 6, 14, 20, 21, 27, 29, Mar 7, 8, 12, 19, 21, 25, 27, 28, Apr 1, 10, 11, 15, 17, 23, 26, 30, May 1, 2, 4, 8. During erection on board vessel --- (28). Total No. of visits (28).

Is the approved plan of main boiler forwarded herewith yes.

Dates of Examination of principal parts — Cylinders 19-3-17 Slides 14-4-17 Covers 14-4-17 Pistons 14-4-17 Rods 19-3-17
 Connecting rods 19-3-17 Crank shaft 14-4-17 Thrust shaft 14-4-17 Tunnel shafts 14-4-17 Screw shaft 1-4-17 Propeller 10-4-17
 Stern tube 10-4-17 Steam pipes tested 2-5-17 Engine and boiler seatings 24-3-17 Engines holding down bolts 1-5-17
 Completion of pumping arrangements 4-5-17 Boilers fixed 1-5-12 Engines tried under steam 4-5-17
 Main boiler safety valves adjusted 4-5-17 Thickness of adjusting washers 3/16" A 1/2" Standard 3/16" F 1/2" A 1/2"
 Material of Crank shaft Steel Identification Mark on Do. 4105-K.H. Material of Thrust shaft Steel Identification Mark on Do. 8440-N.H.
 Material of Tunnel shafts Steel Identification Marks on Do. 14-4-17 P.A. Material of Screw shafts Steel Identification Marks on Do. 4650-41
 Material of Steam Pipes Solid drawn copper 1 1/2" bore x 6 W.G. Test pressure 400 lbs.

General Remarks (State quality of workmanship, opinions as to class, &c.)
 The Machinery of this vessel has been built under special survey, the materials & workmanship are of good quality and the hydraulic test of the boilers proved satisfactory. The whole of the machinery has been securely fitted on board & satisfactorily tried under steam and is in good & safe working condition & eligible in my opinion to be classed as above.
 ✠ L.M.C. 5-12 in the Register's Book.

It is submitted that this vessel is eligible for THE RECORD. L.M.C. 5-12

Certificate (if required) to be sent to the Surveyors and requested not to write on or below the space for Committee's Minute.

The amount of Entry Fee .. £ 3 : 0 0 When applied for, Special .. £ 33 : 14 0 | 21.5.1912
 Donkey Boiler Fee .. £ : : |
 Travelling Expenses (if any) £ : : | 28.5.1912

Committee's Minute WED. MAY 29. 1912
 Assigned L.M.C. 5-12

William Butler
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping

