

REPORT ON MACHINERY.

Received at London Office APR 10 1913

Date of writing Report 19 When handed in at Local Office 9.4.10/3 Port of Sunderland
 No. in Survey held at Sunderland Date, First Survey 28 October Last Survey 4 April 1913
 Reg. Book. on the Steel S.S. "Giara" (Number of Visits 42) Gross Tons 4068
 Master Mauger Built at Sunderland By whom built Sunderland S.S. Coy. Ltd. When built 1913
 Engines made at Sunderland By whom made North Eastern Nav. Eng. Co. Ltd. when made 1913
 Boilers made at do By whom made do do (2085 C) when made 1913
 Registered Horse Power Owners Hall Bros. S.S. Co. Ltd. Port belonging to Newcastle-on-Tyne
 Nom. Horse Power as per Section 28 341 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted No

ENGINES, &c.—Description of Engines Triple expansion No. of Cylinders Three No. of Cranks Three
 Dia. of Cylinders 25" x 42" x 68" Length of Stroke 45" Revs. per minute 65 Dia. of Screw shaft as per rule 14" 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 in the propeller boss yes
 If the liner is in more than one length are the joints burned yes 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 yes Length of stern bush 5'-0"
 Dia. of Tunnel shaft as per rule 12.45 Dia. of Crank shaft journals as per rule 13.08 Dia. of Crank pin 13.2" Size of Crank webs 20.2" x 8.2" Dia. of thrust shaft under collars 13.2" Dia. of screw 14.0" Pitch of Screw 14.3" No. of Blades 4 State whether moveable no Total surface 91 sq. ft.
 No. of Feed pumps Two Diameter of ditto 3.2" Stroke 24" Can one be overhauled while the other is at work yes
 No. of Bilge pumps Two 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" x 9" Ballast Pump 6" x 4" x 6" No. and size of Suctions connected to both Bilge and Donkey pumps
 In Engine Room Three @ 3.2" diameter In Holds, &c. 2 @ 3.2" dia No 1 hold, 2 @ 3.2" dia No 2 hold, 2 @ 3.2" dia No 3 hold, 1 @ 3.2" after hold well, 1 @ 2.5" Tunnel well.
 No. of Bilge Injections 1 sizes 4.2" Connected to condenser, or to circulating pump C.P. Is a separate Donkey Suction fitted in Engine room of size yes 3.2"
 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 4-3-13 of Stern Tube 18-3-13 Screw shaft and Propeller 18-3-13
 Is the Screw Shaft Tunnel watertight yes Is it fitted with a watertight door yes worked from Top platform.

BOILERS, &c.—(Letter for record (R)) Manufacturers of Steel Spencer & Sons Ltd.
 Total Heating Surface of Boilers 5312 sq. ft. 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 22-1-13 No. of Certificate 3081
 Can each boiler be worked separately yes Area of fire grate in each boiler 60.2 sq. ft. No. and Description of Safety Valves to each boiler Two spring loaded Area of each valve 4.07 sq. ft. 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 20" Mean dia. of boilers 16.3.2" Length 11.0" Material of shell plates Steel
 Thickness 1.4" Range of tensile strength 28.5 to 32 tons Are the shell plates welded or flanged no Descrip. of riveting: cir. seams D.R.
 long. seams T.R.D.B. Diameter of rivet holes in long. seams 1.32" Pitch of rivets 9.7" Lap of plates or width of butt straps 20.8"
 Per centages of strength of longitudinal joint rivets 86.5 plate 86.2 Working pressure of shell by rules 180 lbs. Size of manhole in shell 16 x 12"
 Size of compensating ring 9.8" x 1.4" No. and Description of Furnaces in each boiler Three Cor. Material Steel Outside diameter 50.2"
 Length of plain part top 19" bottom 22" Thickness of plates crown 19" bottom 22" Description of longitudinal joint weld. No. of strengthening rings yes
 Working pressure of furnace by the rules 184 lbs. Combustion chamber plates: Material Steel Thickness: Sides 3/4" Back 3/2" Top 3/4" Bottom 3/4"
 Pitch of stays to ditto: Sides 8.2" x 11.8" Back 10.8" x 10.8" Top 8.2" x 11.8" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 182 lbs.
 Material of stays Iron Diameter at smallest part 2.43" Area supported by each stay 101 sq. in. Working pressure by rules 180 lbs. End plates in steam space: Material Steel Thickness 1.5" Pitch of stays 2.4 x 23.8" How are stays secured D.N. Wash Working pressure by rules 180 lbs. Material of stays Steel
 Diameter at smallest part 9.62" Area supported by each stay 56 sq. in. Working pressure by rules 180 lbs. Material of Front plates at bottom Steel
 Thickness 3/4" Material of Lower back plate Steel Thickness 1.5" Greatest pitch of stays 11.4" x 10.8" Working pressure of plate by rules 184 lbs.
 Diameter of tubes 3.4" Pitch of tubes 4.2" x 4.9" Material of tube plates Steel Thickness: Front 3/4" Back 3/4" Mean pitch of stays 11.4" x 9.8"
 Pitch across wide water spaces 14.2" Working pressures by rules 192 lbs. Girders to Chamber tops: Material Steel Depth and thickness of girder at centre 8.78" x 2" Length as per rule 31" Distance apart 11.8" Number and pitch of stays in each 2 @ 8.2"
 Working pressure by rules 180 lbs. Superheater or Steam chest; how connected to boiler how 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



VERTICAL DONKEY BOILER— Manufacturers of Steel

No. _____ Description _____

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

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

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 off Bolts + Nuts for top + bottom ends + main bearings, one set coupling bolts, one set each valves for all pumps One cast iron propeller, one tail shaft assorted bolts nuts + iron.

NORTH EASTERN MARINE ENGINEERING CO LTD

Geo D Weir
M.E.C.

The foregoing is a correct description,

Manufacturer.

Dates of Survey while building	During progress of work in shops	1912 Oct. 28, Nov. 18, 12, 19, 26, 29, Dec. 4, 6, 12, 16, 17, 20, 24, 27, 30, 31, Jan. 4, 10, 16, 17, 21, 22, 28,
	During erection on board vessel	Feb. 2, 4, 11, 12, 18, 21, 25, 27, Mar. 7, 10, 12, 18, 26, Apr. 1, 2, 3, 4
	Total No. of visits	(42)

Is the approved plan of main boiler forwarded herewith yes
" " " donkey " " " yes

Dates of Examination of principal parts—Cylinders	9-1-13	Slides	16-1-13	Covers	20-12-12	Pistons	20-12-12	Rods	20-12-12
Connecting rods	20-12-12	Crank shaft	20-1-13	Thrust shaft	11-2-13	Tunnel shafts	21-1-13	Screw shaft	10-3-13
Propeller	11-2-13	Stern tube	10-3-13	Steam pipes tested	14-1-13	Engine and boiler seatings	4-3-13	Engines holding down bolts	1-4-13
Completion of pumping arrangements	2-4-13	Boilers fixed	26-3-13	Engines tried under steam	2-4-13	Main boiler safety valves adjusted	2-4-13	Thickness of adjusting washers	3/8", F 3/8", A 5/16"; 1/2", F 1/2", A 3/8";
Material of Crank shaft	Steel	Identification Mark on Do.	20456 M.B.	Material of Thrust shaft	Steel	Identification Mark on Do.	2033 M.B.	Material of Tunnel shafts	Steel
Material of Tunnel shafts	Steel	Identification Marks on Do.	2040-1 M.B.	Material of Screw shafts	Steel	Identification Marks on Do.	5214 PA	Material of Steam Pipes	Wrought iron lapwelded 3/8" + 1/2" thick
Material of Steam Pipes	Wrought iron lapwelded 3/8" + 1/2" thick	Test pressure	540 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 + the hydraulic tests of the boilers proved satisfactory. The whole of the machinery has been securely fitted on board + tried under steam and is in good + safe working condition + eligible in my opinion to be classed and have passed **L.M.C. 4-13** in the Register's Book.

It is submitted that this vessel is eligible for THE RECORD. + L.M.C. 4.13.

APR

JUR
11/4/13

William Butler

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

The amount of Entry Fee	£ 3 : 0 : 0	When applied for,	
Special	£ 34 : 1 : 0	When received,	9/4/13
Donkey Boiler Fee	£		
Travelling Expenses (if any)	£		18/4/13

Committee's Minute FRI. APR. 11 1913

Assigned + done 4/13

MACHINERY CERTIFICATE WRITTEN.



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Certificate (if required) to be sent to

(The Surveyors are requested not to write on or below the space for Committee's Minute.)