

REPORT ON MACHINERY

No. 25783

Received at London Office SAT. MAR. 23. 1912

Date of writing Report 10 When handed in at Local Office 15. 2. 1912 Port of Sunderland

No. in Survey held at Sunderland Date, First Survey 16 Dec 09 Last Survey 9 March 1912
 Reg. Book. on the S.S. Mashinongé (Number of Visits 47) Tons } Gross 4793
 Net 2672

Master Guffin Built at Sunderland By whom built Messrs Short Bros. Ltd When built 1912

Engines made at Sunderland By whom made North Eastern Marine Eng Co Ltd. (1911) when made 1912

Boilers made at Sunderland By whom made North Eastern Marine Eng Co Ltd. (1911) when made 1912

Registered Horse Power Owners E. F. W. Roberts (Mgs) Port belonging to Liverpool

Nom. Horse Power as per Section 28 484 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted yes

ENGINES, &c.—Description of Engines

Triple expansion No. of Cylinders Three No. of Cranks Three

Dia. of Cylinders 26 x 44 x 43 Length of Stroke 48 Revs. per minute 11 Dia. of Screw shaft 14.5 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 61"

Dia. of Tunnel shaft 13.1" Dia. of Crank shaft journals 13.1" Dia. of Crank pin 14.4" Size of Crank webs 21 1/2 x 8 3/4 Dia. of thrust shaft under collars 14 1/4" Dia. of screw 17.6" Pitch of Screw 1 1/4" No. of Blades 4 State whether moveable no Total surface 104 sq ft

No. of Feed pumps Two Diameter of ditto 9 1/2" Stroke 21" Can one be overhauled while the other is at work yes

No. of Bilge pumps Two Diameter of ditto 5" Stroke 26" Can one be overhauled while the other is at work yes

No. of Donkey Engines Three Sizes of Pumps 1/2" x 9 1/2" x 10", 1/2" x 5" x 6" No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room Three @ 3 1/2" dia in wells & 2 @ 3" in fwd stokehold In Holds, &c. No 1, 1 @ 3 1/2" dia in centre well, 1 @ 3" in centre well, No 2, 1 @ 3 1/2" dia in centre well, No 3, 1 @ 3 1/2" dia in centre well, No 4, 1 @ 3 1/2" in centre well & 1 @ 3 1/2" in tunnel well.

No. of Bilge Injections 1 sizes 6" 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 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 19-12-11 of Stern Tube 8-1-12 Screw shaft and Propeller 8-1-12

Is the Screw Shaft Tunnel watertight yes Is it fitted with a watertight door yes worked from top platform

BOILERS, &c.—(Letter for record)

Manufacturers of Steel J Spence & Sons Ltd

Total Heating Surface of Boilers 6888 sq ft Is Forced Draft fitted yes No. and Description of Boilers Three single ended

Working Pressure 180 lbs Tested by hydraulic pressure to 360 lbs Date of test 6-10-11 No. of Certificate 2958

Can each boiler be worked separately yes Area of fire grate in each boiler 51.3 sq ft No. and Description of Safety Valves to each boiler Two direct spring Area of each valve 8.29 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 1 1/2" feet Mean dia. of boilers 14 3/4" Length 11 1/4" Material of shell plates Steel

Thickness 1 1/8" Range of tensile strength 28 to 32 tons Are the shell plates welded or flanged no Descrip. of riveting: cir. seams D.R.

long. seams T.R.D.B.S Diameter of rivet holes in long. seams 1 1/4" Pitch of rivets 9 1/16" Lap of plates or width of butt straps 19"

Per centages of strength of longitudinal joint rivets 85.8 Working pressure of shell by rules 180.5 lbs Size of manhole in shell 16 x 12

Size of compensating ring dished No. and Description of Furnaces in each boiler Three box Material Steel Outside diameter 39 1/2"

Length of plain part top 35" Thickness of plates crown 35" Description of longitudinal joint weld No. of strengthening rings 13

Working pressure of furnace by the rules 21 1/2 lbs Combustion chamber plates: Material Steel Thickness: Sides 13/16" Back 3/8" Top 1/16" Bottom 1/16"

Pitch of stays to ditto: Sides 10 1/4 x 17 1/8" Back 10 1/2 x 11 1/8" Top 10 1/4 x 10 1/8" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 181 lbs

Material of stays Steel Diameter at smallest part 1 1/16" Area supported by each stay 116 sq in Working pressure by rules 187 lbs End plates in steam space:

Material Steel Thickness 1 1/4" Pitch of stays 20 1/8 x 19 1/8" How are stays secured D.N. Wash Working pressure by rules 182 lbs Material of stays Steel

Diameter at smallest part 3.03 Area supported by each stay 410 sq in Working pressure by rules 183 Material of Front plates at bottom Steel

Thickness 3/4" Material of Lower back plate Steel Thickness 1 1/16" Greatest pitch of stays 11 1/2 x 11 1/8" Working pressure of plate by rules 182 lbs

Diameter of tubes 2 1/2" Pitch of tubes 3 3/4 x 3 3/4" Material of tube plates Steel Thickness: Front 3/4" Back 3/4" Mean pitch of stays 9 3/8 x 1 1/2"

Pitch across wide water spaces 13 1/2" Working pressures by rules 222 lbs Girders to Chamber tops: Material Steel Depth and thickness of girder at centre 8 3/8 x 2 1/4" Length as per rule 35 1/4" Distance apart 10 1/2" Number and pitch of stays in each 2 @ 10 1/4"

Working pressure by rules 181 lbs Superheater or Steam chest; how connected to boiler none 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

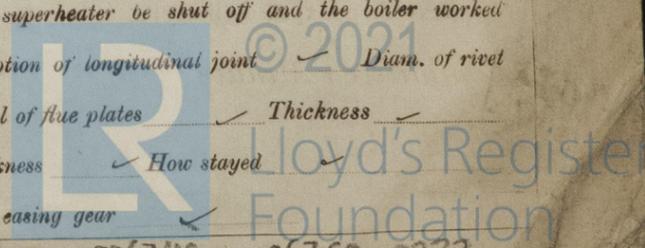
If stiffened with rings yes Distance between rings yes Working pressure by rules yes End plates: Thickness yes How stayed yes

Working pressure of end plates yes Area of safety valves to superheater yes Are they fitted with easing gear yes

If not, state whether, and when, one will be sent?

Is a Report also sent on the Hull of the Ship?

T.M.C. 11-7



006749 - 006759 - 0233

VERTICAL DONKEY BOILER—

Manufacturers of Steel *No donkey boiler fitted.*

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
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:— Propellers, propeller shaft, bottom end bearing, valve spindle, set of coupling bolts & nuts, two each bolts & nuts for connecting rod top & bottom ends & main bearings, valves all pumps one set each, assorted bolts nuts & iron.

The foregoing is a correct description,
 NORTH EASTERN MARINE ENGINEERING CO LTD
Walter Dutter Manufacturer.

Dates of Survey while building	During progress of work in shops --	1909 Dec 16, 1910 Jan 13, Jun 8, 22, 1911 Mar 27, Apr 20, May 1, Jun 12, 16, July 11, 18, 24, Aug 22, 25
	During erection on board vessel --	Sep. 11, 14, 21, 29 Oct. 2, 6, 12, 13, 14, 19, 22, 26, 30, Nov. 2, 4, 23 Dec. 1, 4, 12, 18, 20 Jan. 5, 12, 15, 17, 18, 19, 26, 31
	Total No. of visits	Feb. 9, 17, Mar 19 (47)

Is the approved plan of main boiler forwarded herewith		yes ✓
" " " donkey " " "		✓
Dates of Examination of principal parts—Cylinders	30-10-11	Slides 14-12-11
Covers	26-10-11	Pistons 30-10-11
Rods	2-11-11	Connecting rods 1-5-11
Crank shaft	23-10-11	Thrust shaft 14-12-11
Tunnel shafts	14-12-11	Screw shaft 30-11-11
Propeller	2-11-11	Stern tube 2-11-11
Steam pipes tested	12-12-11	Engine and boiler seatings 19-12-11
Engines holding down bolts	12-1-12	Completion of pumping arrangements 14-2-12
Boilers fixed	12-1-12	Engines tried under steam 19-1-12
Main boiler safety valves adjusted	19-1-12	Thickness of adjusting washers P.Bh. 3/8", C.Bh. 1/2" 3/8", S.Bh. 1/2" 3/8"
Material of Crank shaft	Steel Identification Mark on Do. 1809 H.S.	Material of Thrust shaft
Material of Tunnel shafts	Steel Identification Marks on Do. 1895 H.S. 1846 H.S. 1842 H.S. 1844 H.S. 1840 H.S.	Material of Screw shafts
Material of Steam Pipes	Lap welded not iron 1/2" & 3/8" 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 and 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 and satisfactorily tried under steam and is in good & safe working condition and eligible in my opinion to be classed and have record **LM.C.3-12** in the Register Book.

It is submitted that this vessel is eligible for THE RECORD + LMC 3.12.
 F.D.

J.W.D. ARS
 25/3/12

The amount of Entry Fee .. £	3 :-	When applied for,
Special £	44:4 0:	21. 3. 1912
Donkey Boiler Fee £	:	When received,
Travelling Expenses (if any) £	:	14. 4. 1912

Committee's Minute
 Assigned

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

TUE. MAR. 26. 1912

+ LMC 3.12

MACHINERY CERTIFICATE WRITTEN

