

REPORT ON MACHINERY.

No. 64228

Received at London Office

WED. MAY 21. 1913

Date of writing Report 19 When handed in at Local Office MAY 20 1913 Port of NEWCASTLE-ON-TYNE

No. in Survey held at South Shields Date, First Survey 2nd Dec 1912 Last Survey 9th May 1913
 Reg. Book. 97m 59ft the S.S. Treadwell (Number of Visits 40) Tons { Gross 4260
 Master Treadwell Built at South Shields By whom built John Readhead & Sons Ltd. When built 1913
 Engines made at South Shields By whom made John Readhead & Sons Ltd. when made 1913
 Boilers made at South Shields By whom made John Readhead & Sons Ltd. when made 1913
 Registered Horse Power 385 Owners Hain S.S. Co. Ltd. (E. Hain & Son Mgrs) Port belonging to H. J. J. J.
 Nom. Horse Power as per Section 28 385 Is Refrigerating Machinery fitted for cargo purposes No. Is Electric Light fitted No.

ENGINES, &c.—Description of Engines Triple Expansion Surface Condensing No. of Cylinders 3 No. of Cranks 3
 Dia. of Cylinders 26" - 42" - 69" Length of Stroke 48" Revs. per minute ✓ Dia. of Screw shaft 14.4" Material of screw shaft Iron
 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 ✓ If two liners are fitted, is the shaft lapped or protected between the liners ✓ Length of stern bush 4'-10"
 Dia. of Tunnel shaft 12.97" Dia. of Crank shaft journals 13.61" Dia. of Crank pin 13.14" Size of Crank webs 18" x 9" Dia. of thrust shaft under collars 14.5" Dia. of screw 17'-6" Pitch of Screw 16'-6" / 18'-6" No. of Blades 4 State whether moceable No. Total surface 87 sq
 No. of Feed pumps 2 Diameter of ditto 3.5" Stroke 24" Can one be overhauled while the other is at work Yes
 No. of Bilge pumps 2 Diameter of ditto 4.3/8" Stroke 24" Can one be overhauled while the other is at work Yes
 No. of Donkey Engines 3 Sizes of Pumps 13.5" x 9" x 13" 7.5" x 5" x 6" No. and size of Suctions connected to both Bilge and Donkey pumps In Engine Room 3 - Pat 3.5", Centre 3.5", Starb 3.5" In Holds, &c. Two in each hold, port 3.5", starb 3.5"
 In Engine Room 3 - Pat 3.5", Centre 3.5", Starb 3.5" In Holds, &c. Two in each hold, port 3.5", starb 3.5"
 No. of Bilge Injections 1 sizes 5.5" Connected to condenser, or to circulating pump pump Is a separate Donkey Suction fitted in Engine room & size Yes 3.5"
 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 8-4-13 of Stern Tube 8-4-13 Screw shaft and Propeller 8-4-13
 Is the Screw Shaft Tunnel watertight Yes Is it fitted with a watertight door Yes worked from Top platform

BOILERS, &c.—(Letter for record T. 7.) Manufacturers of Steel John Spencer & Sons Ltd.
 Total Heating Surface of Boilers 6,330 sq Is Forced Draft fitted No. No. and Description of Boilers Two single-ended multibular
 Working Pressure 180 lbs Tested by hydraulic pressure to 360 lbs Date of test 4.4.13 No. of Certificate 8471
 Can each boiler be worked separately Yes Area of fire grate in each boiler 66 sq No. and Description of Safety Valves to each boiler Two Spring-loaded Area of each valve 7.070 Pressure to which they are adjusted 180 lbs Are they fitted with easing gear Yes
 Smallest distance between boilers or uptakes and bunkers or woodwork 1'-6" Mean dia. of boilers 17'-1.3/4" Length 11'-6" Material of shell plates Steel
 Thickness 1.78" Range of tensile strength 28/32 tons Are the shell plates welded or flanged No. Descrip. of riveting: cir. seams Or. Lap long. seams Or. butt straps
 Diameter of rivet holes in long. seams 1.3/8" Pitch of rivets 9.3/32" Lap of plates or width of butt straps 1.9.3/4"
 Per centages of strength of longitudinal joint rivets 85.38% plate 88.38% Working pressure of shell by rules 182 lbs Size of manhole in shell 16" x 12"
 Size of compensating ring 7" x 1.3/8" No. and Description of Furnaces in each boiler 3-motion Material Steel Outside diameter 4'-3"
 Length of plain part top 1.19" bottom 1.32" Thickness of plates crown 1.19" bottom 1.32" Description of longitudinal joint weld No. of strengthening rings ✓
 Working pressure of furnace by the rules 185 lbs Combustion chamber plates: Material Steel Thickness: Sides 3/32" Back 3/32" Top 3/32" Bottom 1"
 Pitch of stays to ditto: Sides 10" x 9.1/2" Back 9.1/2" x 9.1/2" Top 10" x 9" If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 193 lbs
 Material of stays Iron Diameter at smallest part 1.3/8" Area supported by each stay 930" Working pressure by rules 186 lbs End plates in steam space: Material Steel Thickness 1.7/16" Pitch of stays 25" x 21" How are stays secured On wedges Working pressure by rules 185 lbs Material of stays Steel
 Diameter at smallest part 3.53" Area supported by each stay 5260" Working pressure by rules 194 lbs Material of Front plates at bottom Steel Thickness 7/8" Material of Lower back plate Steel Thickness 1" Greatest pitch of stays 13" x 9.1/16" Working pressure of plate by rules 211 lbs
 Diameter of tubes 3.5" Pitch of tubes 4.3/4" Material of tube plates Steel Thickness: Front 7/8" Back 7/8" Mean pitch of stays 9.1/2"
 Pitch across wide water spaces 14" Working pressures by rules 244 lbs Girders to Chamber tops: Material Steel Depth and thickness of girder at centre 8.1/2" x 2" Length as per rule 30.5" Distance apart 10" Number and pitch of stays in each 2-9"
 Working pressure by rules 247 lbs Superheater or Steam chest; how connected to boiler None 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 ✓



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 Safety _____

Valves _____ No. of Safety Valves _____ Area of each _____ Pressure to which they are adjusted _____ Date of adjustment _____

If fitted with casing gear _____ If steam from main boilers can feed the donkey boiler _____ Dia. of donkey boiler _____ Length _____

Material of shell plates _____ Thickness _____ Range of inside length _____ 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:— Propeller, propeller shaft - 3rd crank shaft - two top end bolts nuts - two bottom end bolts nuts - two main bearing bolts - one set of coupling bolts - one set each of feed & bilge pump valves - one set each air & circulating pump valves, secured bolts nuts & turn over iron keys

The foregoing is a correct description,

J. M. Headhead Manufacturer.

Dates of Survey while building	During progress of work in shops --	1912 Dec. 24, 26, 27, 30, 31, Jan 3, 7, 14, 20, 23, 25, Feb. 6, 10, 13, 17, 22, 28, Mar. 5, 9, 19, 25, 26, 27, 28, 31
	During erection on board vessel ---	Apr. 1, 3, 4, 5, 10, 14, 16, 21, 22, 25, 29, 30, May 1, 9
	Total No. of visits	40

Is the approved plan of main boiler forwarded herewith Yes

Dates of Examination of principal parts—	Cylinders	6 th Feb.	Slides	22 nd Feb.	Covers	10 th Feb.	Pistons	17 th Feb.	Rods	13 th Feb.	
Connecting rods	5-3-13	Crank shaft	5-3-13	Thrust shaft	8 th Apr.	Tunnel shafts	8 th Apr.	Screw shaft	8 th Apr.	Propeller	19 th Mar.
Stern tube	1 st Apr.	Steam pipes tested	25 th April	Engine and boiler seatings	14 th Apr.	Engines holding down bolts	30 th April				
Completion of pumping arrangements	29 th April	Boilers fixed	21 st April	Engines tried under steam	1 st May						
Main boiler safety valves adjusted	1 st May	Thickness of adjusting washers	Port. 1/16" Star 1/16" Star 1/16" Star 1/16" Star								
Material of Crank shaft	Steel	Identification Mark on Do.	2415 MB	Material of Thrust shaft	Steel	Identification Mark on Do.	8190 K				
Material of Tunnel shafts	Crucible	Identification Marks on Do.	5150 R.L.A.	Material of Screw shafts	Crucible	Identification Marks on Do.	5150 R.L.A.				
Material of Steam Pipes	Copper	5 1/2" dia. hot s.w. G		Test pressure	360 lbs						

General Remarks (State quality of workmanship, opinions as to class, &c.) The Engines & Boilers of this vessel have been constructed under special survey. The materials and workmanship are sound and good. The engines & auxiliary machinery had been tried under steam. The safety valves have been adjusted under steam to their working pressure. The machinery is now in a safe & good working condition & is eligible, in my opinion to have the notation + L.M.C. in the Register Book.

It is submitted that this vessel is eligible for THE RECORD. + L.M.C. 5.13
EJS
21.5.13

The amount of Entry Fee	£ 3 : 0 : 0	When applied for.	MAY 20 1913
Special	£ 39 : 5 : 0		
Donkey Boiler Fee	£ 2 : 2 : 0	When received.	23/5/13
Travelling Expenses (if any)	£ : : 0		
Committee's Minute	FRI. MAY 23 1913		
Assigned	Thmc 5.13		

R. J. Amers & *J. Houston*
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.



NEWCASTLE-ON-TYNE.

Certificate (if required) to be sent to

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