

REPORT ON MACHINERY

No. 63454
FRI. DEC. 27. 1912

Received at London Office

Date of writing Report 18th Dec 1912 When handed in at Local Office 21st Dec 1912 Port of

NEWCASTLE-ON-TYNE.

No. in Survey held at South Shields
Reg. Book.Date, First Survey 20th Jan 1912 Last Survey 18th Dec 1912

38 Sup. on the S.S. "TREVAYLOR"

(Number of Visits 15)

Gross 4249
Net 2717
Tons

Master J. Robins Built at South Shields By whom built John Readhead & Sons Ltd. When built 1912

Engines made at South Shields By whom made John Readhead & Sons Ltd. when made 1912

Boilers made at South Shields By whom made John Readhead & Sons Ltd. when made 1912

Registered Horse Power Owners Hain S.S. Co. Ltd (E Hain & Son Engs) Port belonging to St. Ives.

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 Cond^g 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 as per rule 14.38" 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 as per rule 12.97" Dia. of Crank shaft journals as per rule 13.61" Dia. of Crank pin 13 3/4" Size of Crank webs 18" x 9" Dia. of thrust shaft under

collars 14 1/2" Dia. of screw 17'-6" Pitch of Screw 16'-6" / 18'-6" No. of Blades 4 State whether moveable No Total surface 87 ft²

No. of Feed pumps 2 Diameter of ditto 3 1/2" 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 2 Sizes of Pumps 13 1/2" x 9" x 13", 7 1/2" x 5" x 6" No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room 3 - Port 3 1/2", centre 3 1/2", starboard 3 1/2" In Holds, &c. Two in each hold - port 3 1/2", starboard 3 1/2"

Tunnel well suction 2 1/2"

No. of Bilge Injections 1 sizes 5 1/2" Connected to condenser, or to circulating pump pump 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

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 4-11-12 of Stern Tube 5-11-12 Screw shaft and Propeller 11-11-12

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

BOILERS, &c.—(Letter for record Yes) Manufacturers of Steel John Spencer & Sons Ltd.

Total Heating Surface of Boilers 6330 ft² Is Forced Draft fitted No No. and Description of Boilers Two single-ended multi

Working Pressure 180 lbs Tested by hydraulic pressure to 360 lbs Date of test 6-11-12 No. of Certificate 8406

Can each boiler be worked separately Yes Area of fire grate in each boiler 66 ft² No. and Description of Safety Valves toeach boiler Two - spring loaded Area of each valve 7.07 ft² 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'-8" Mean dia. of boilers 17'-1 3/8" Length 11'-6" Material of shell plates Steel

Thickness 1 3/8" Range of tensile strength 28/32 tons Are the shell plates welded or flanged No Descrip. of riveting: cir. seams D.R. Sep.

long. seams J.R. Butt Strip 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 85.38% 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 - Morrison Material Steel Outside diameter 4'-3"

Length of plain part top Thickness of plates crown 1 1/2" 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 2 3/32" Back 2 3/32" Top 2 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 2-31" Area supported by each stay 93 ft² 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 D.N. Washers Working pressure by rules 185 lbs Material of stays Steel

Diameter at smallest part 9.82" Area supported by each stay 52.5 ft² 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 1/2" 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 9 1/4" x 2" Length as per rule 30 1/2" 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 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 _____ Rivets _____
 Dia. of rivet holes _____ Whether punched or drilled _____ Pitch of rivets _____ Lap of plating _____ Per centage of strength of joint _____ 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, $\frac{1}{2}$ 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; ballast pump rod, assorted bolts & nuts, & iron.

The foregoing is a correct description,
 for John Headhead & Sons Manufacturer.

Dates of Survey while building { During progress of work in shops -- } 1912 Jan 20. Feb. 10. 19. 23. 28 Feb. 3. 6. 13. 17. 20. Oct. 1. 4. 9. 14. 16. 18. 21. 28. Nov. 1. 4. 5. 6. 8. 11.
 { During erection on board vessel -- } 19. 20. 25. 26. 28. Dec. 2. 3. 4. 6. 9. 10. 11. 12. 13. 15. 17.
 Total No. of visits 41

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

Dates of Examination of principal parts—Cylinders 20-9-12 Slides 13-9-12 Covers 20-9-12 Pistons 16-10-12 Rods 14-10-12
 Connecting rods 9-10-12 Crank shaft 9-10-12 Thrust shaft 28-10-12 Tunnel shafts 28-10-12 Screw shaft 5-11-12 Propeller 1-11-12
 Stern tube 1-11-12 Steam pipes tested 22-11-12 Engine and boiler seatings 8-11-12 Engines holding down bolts 28-11-12
 Completion of pumping arrangements 9-12-12 Boilers fixed 2-12-12 Engines tried under steam 3-12-12
 Main boiler safety valves adjusted 3-12-12 Thickness of adjusting washers Star. Bli. $S \frac{1}{2}$ "P $\frac{3}{8}$ ", Port. Bli. $S \frac{7}{16}$ "P $\frac{7}{16}$ "
 Material of Crank shaft Steel Identification Mark on Do. 3059 WDM Material of Thrust shaft Steel Identification Mark on Do. 7418 R H
 Material of Tunnel shafts Steel Identification Marks on Do. 5047 M R Material of Screw shafts Iron Identification Marks on Do. 5047 J H
 Material of Steam Pipes Solid drawn copper 5" Bore No 4 W 8 Test pressure 360 lbs per sq inch.

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 & workmanship are sound & good. The engines & auxiliary machinery have been tried under steam, & the safety valves have been adjusted to their working pressures. The machinery is now in a good & safe working condition, & eligible in my opinion to have the notation + L. M. C. 12-12, in the Register Book.

It is submitted that
 this vessel is eligible for
 THE REGOLD + LMC 12.12.

JWD
 24/12/12

GRD

The amount of Entry Fee .. £ 3 : 0 : 0 When applied for, DEC 24 1912
 Special .. £ 39 : 5 : 0
 Donkey Boiler Fee .. £ 2 : 2 : 0 When received, 28/12/12
 Travelling Expenses (if any) £ : : 1912

Committee's Minute

TUE DEC 31 1912

Assigned

LMC 12.12

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



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