

## REPORT ON MACHINERY.

No. 61042

Received at London Office

TUE SEP 19 1911

Date of writing Report 26<sup>th</sup> Aug 1911 When handed in at Local Office 30<sup>th</sup> Aug 1911 Port of NEWCASTLE ON TYNENo. in Survey held at South Shields Date, First Survey 20<sup>th</sup> Apr 1911 Last Survey 29<sup>th</sup> Aug 1911  
Reg. Book.

p. 19. on the s/s "Trevalgan"

(Number of Visits 51)

Tons { Gross 4185  
Net 2675

Master Built at South Shields By whom built John Readhead &amp; Sons When built 1911

Engines made at South Shields By whom made John Readhead &amp; Sons when made 1911

Boilers made at South Shields By whom made John Readhead &amp; Sons when made 1911

Registered Horse Power Owners E. Hain &amp; Sons 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 Exp<sup>d</sup> Surface Cond<sup>d</sup> No. of Cylinders 3 1/4 No. of Cranks 3Dia. of Cylinders 26"-42"-69" Length of Stroke 48" Revs. per minute 70 Dia. of Screw shaft as per rule 14.39" Material of Iron  
as fitted 14.5" screw shaft

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

Is 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 9"x18" 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 ft<sup>2</sup>

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"x9"x13" + 7 1/2"x5"x6" No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room Port 3 1/2" Centre 3 1/2" Star 3 1/2" In Holds, &amp;c. Two in each hold. Port 3 1/2"

Star 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 &amp; 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

That 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 19-7-11 of Stern Tube 21-7-11 Screw shaft and Propeller 2-8-11

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

MILERS, &amp;c.—(Letter for record S. R. Manufacturers of Steel John Spencers &amp; Sons Ltd.

Total Heating Surface of Boilers 6330 ft<sup>2</sup> Is Forced Draft fitted No No. and Description of Boilers Two single Multi- steel

Working Pressure 180 lbs Tested by hydraulic pressure to 360 lbs Date of test 17-7-11 No. of Certificate 8164

Can each boiler be worked separately Yes Area of fire grate in each boiler 66 ft<sup>2</sup> No. and Description of Safety Valves toeach boiler Two spring loaded Area of each valve 4.06 ft<sup>2</sup> 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 2'-8" Mean dia. of boilers 17'-1 3/8" Length 11'-6" Material of shell plates steel

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

Long. seams D.R. butt 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"

Percentages of strength of longitudinal joint rivets 85.38% Working pressure of shell by rules 182 lbs Size of manhole in shell 12" x 16"

Plate 85.38% No. and Description of Furnaces in each boiler 3- Morison Material steel Outside diameter 4'-3"

Thickness of compensating ring 7" x 1 3/8" No. and Description of Furnaces in each boiler 3- Morison Material steel Outside diameter 4'-3"

Length of plain part top crown 19/32 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 23/32 Back 23/32 Top 23/32 Bottom 1"

Pitch of stays to ditto: Sides 10"x9 1/2" Back 9 1/2"x9 1/2" Top 10"x9 If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 192 lbs

Material of stays Iron Area at smallest part 2.31 ft<sup>2</sup> Area supported by each stay 92.5 ft<sup>2</sup> Working pressure by rules 187 lbs End plates in steam space:

Material steel Thickness 1 7/16" Pitch of stays 21"x25" How are stays secured D. Nuts &amp; W. Working pressure by rules 185 lbs Material of stays steel

Area at smallest part 9.82 ft<sup>2</sup> Area supported by each stay 525 ft<sup>2</sup> 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 16"x9 1/2" Working pressure of plate by rules 211 lbs

Diameter of tubes 3 1/2" Pitch of tubes 4 3/4"x4 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"x2" Length as per rule 30 1/2" Distance apart 10" Number and pitch of stays in each Two - 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

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 ✓

Lloyd's Register  
Foundation  
W 398-0152

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 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 top end bolts & nuts; two bottom end bolts & nuts, two main bearing bolts; one set coupling bolts;  $\frac{1}{2}$  crank shaft; spare prop<sup>r</sup> & prop<sup>r</sup> shaft; one set each of feed, bilge, air & cit<sup>3</sup> pump valves; assorted bolts & nuts & iron of various sizes.

The foregoing is a correct description,

JOHN KEACHE & SONS, LIMITED

Manufacturer.

Dates of Survey while building	During progress of work in shops - -	1911 Apr. 20. 25. 26. May. 31. Jun. 9. 14. 19. 24. 30. Jul. 4. 6. 10. 11. 14. 17. 19. 21. 28. 31.
	During erection on board vessel - -	Aug. 2. 4. 8. 9. 11. 14. 17. 18. 23. 28. 29.
	Total No. of visits	31

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

Dates of Examination of principal parts—Cylinders	9-6-11	Slides	9-6-11	Covers	19-6-11	Pistons	14-6-11	Rods	14-6-11
Connecting rods	14-6-11	Crank shaft	14-6-11	Thrust shaft	10-7-11	Tunnel shafts	9-6-11	Screw shaft	17-7-11
Propeller	11-7-11	Stern tube	17-7-11	Steam pipes tested	11-8-11	Engine and boiler seatings	19-7-11	Engines holding down bolts	17-8-11
Completion of pumping arrangements	18-8-11	Boilers fixed	14-8-11	Engines tried under steam	18-8-11				
Main boiler safety valves adjusted	18-8-11	Thickness of adjusting washers	Star <sup>d</sup> Bls. S $\frac{7}{16}$ P $\frac{7}{16}$ Port Bls. S $\frac{3}{8}$ P $\frac{7}{16}$						
Material of Crank shaft	Steel	Identification Mark on Do.	233-4 M.B.S-11	Material of Thrust shaft	Steel	Identification Mark on Do.	169 J.H. M.B.4-11		
Material of Tunnel shafts	Steel	Identification Marks on Do.	4233 J.H.	Material of Screw shafts	Iron	Identification Marks on Do.	4233 J.H.		
Material of Steam Pipes	Solid Drawn Copper	4 W.G.	Test pressure	360 lbs per sq. in.					

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 being sound & good. The main engines & auxiliary machinery have been tried under steam & the safety valves of the main & donkey boilers adjusted to their working pressures. The machinery is in good order & a safe working condition, & eligible in my opinion to have the record + L.M.C. 8-11, in the Register Book.

It is submitted that this vessel is eligible for THE RECORD. + LMC 8-11

The amount of Entry Fee	£ 3 : 0 : 0	When applied for,
Special	£ 39 : 5 : 0	SEP 18 1911
Donkey Boiler Fee	£ 2 : 2 : 0	When received,
Travelling Expenses (if any)	£ : : 0	21-9-1911

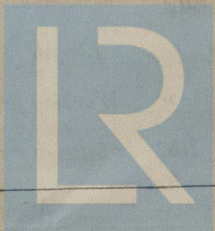
Committee's Minute

Assigned

FRI. SEP. 22. 1911

+ LMC 8-11

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



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Lloyd's Register Foundation

Rpt. 5a.

Date of writing Reg. No. in Surve Reg. Book.

Sup. 19 on the

Master

Engines made a

Boilers made at

Registered Hors

MULTITUD

(Letter for reco

Boilers One

No. of Certifica

safety valves to

Are they fitted

Smallest distan

Material of she

Descrip. of riv

Lap of plates

rules 97 lbs

boiler Two

Description of l

plates. Materi

Top 10" X 10"

smallest part

Pitch of stays

Area supported

Lower back pla

Pitch of tubes

water spaces

girder at centr

Working press

separately

holes ✓ P

If stiffened with

Working press

Dates of Survey while building Dur won Dur bo

GENERAL

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safety

of 90 lbs

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Travelling

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Assigned