

## REPORT ON MACHINERY.

Mach. No. 5064

Sta. No. 23289

MON. 3 JUN 1907

Port of MIDDLESBROUGH-ON-TEES.

Received at London Office

No. in Survey held at  
Reg. Book. on theMiddlesbrough  
S. S. IdahoDate, first Survey 23<sup>rd</sup> NovLast Survey 28<sup>th</sup> May 1907

(Number of Visits 10)

Master John Richardson

Built at Sunderland

By whom built R. Thompson &amp; Son Ltd

Gross 597.53  
Tons Net 565.10

When built 1907

Engines made at Middlesbrough

By whom made Richardsons Westgarth &amp; Co. Ltd

when made 1907

Boilers made at ditto

By whom made ditto

when made 1907

Registered Horse Power

Owners Frank Robinson Atkinson

Port belonging to Middlesbrough

Nom. Horse Power as per Section 28 95

Is Refrigerating Machinery fitted for cargo purposes no

Is Electric Light fitted no

## ENGINES, &amp;c.—Description of Engines

Triple expansion

No. of Cylinders 3 No. of Cranks 3

Dia. of Cylinders 15 $\frac{1}{2}$  - 25 - 41 Length of Stroke 27 Revs. per minute 100 Dia. of Screw shaft as per rule 8.45 as fitted 8.5 Material of Ingot Steel 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

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 fitting If two

liners are fitted, is the shaft lapped or protected between the liners Length of stern bush 3'-0"

Dia. of Tunnel shaft as per rule 7.28 as fitted 7.3 Dia. of Crank shaft journals as per rule 7.65 as fitted 7.3 Dia. of Crank pin 7.3 Size of Crank webs 12x5 Dia. of thrust shaft under

collars 7.3 Dia. of screw 10'-9" Pitch of Screw 13'-0" No. of Blades 4 State whether moveable no Total surface 35 ft<sup>2</sup>No. of Feed pumps 2 Diameter of ditto 2 $\frac{1}{2}$  Stroke 14 Can one be overhauled while the other is at work Yes

No. of Bilge pumps 2 Diameter of ditto 3 Stroke 14 Can one be overhauled while the other is at work Yes

No. of Donkey Engines 2 duplex Sizes of Pumps 4 $\frac{1}{2}$  x 2 $\frac{1}{2}$  x 4" Feed 6 x 6 x 6" No. and size of Suctions connected to both Bilge and Donkey pumpsIn Engine Room Two of 2" one of 2 $\frac{1}{4}$ " In Holds, &c. Fore hold one of 2 $\frac{1}{2}$  two of 2"After hold one of 2 $\frac{1}{2}$  Tunnel one of 2 $\frac{1}{2}$ " No. of Bilge Injections 1 sizes 3 $\frac{1}{2}$  Connected to condenser, or to circulating pump C.P. Is a separate Donkey Suction fitted in Engine room & size Yes 2 $\frac{1}{2}$ "

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

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 30-4-07 of Stern Tube 30-4-07 Screw shaft and Propeller 15-5-07

Is the Screw Shaft Tunnel watertight see ship report Is it fitted with a watertight door Yes worked from Cylinder grating

BOILERS, &amp;c.—(Letter for record (S) ) Manufacturers of Steel Clyde Bridge Steel Co. Ltd.

Total Heating Surface of Boilers 1558 ft<sup>2</sup> Is Forced Draft fitted no No. and Description of Boilers Two, single ended

Working Pressure 160 lb Tested by hydraulic pressure to 320 lb Date of test 2-5-07 No. of Certificate 3912

Can each boiler be worked separately Yes Area of fire grate in each boiler 28 ft<sup>2</sup> No. and Description of Safety Valves to

each boiler 2 direct spring Area of each valve 4.91 Pressure to which they are adjusted 165 lb Are they fitted with easing gear Yes

Smallest distance between boilers or uptakes and bunkers or woodwork 9 $\frac{1}{2}$ " Mean dia. of boilers 10'-0" Length 9'-0" Material of shell plates Steel

Thickness 13/16 Range of tensile strength 28/32 Are the shell plates welded or flanged no Descrip. of riveting: cir. seams DR L.

long. seams JR DRS Diameter of rivet holes in long. seams 15/16 Pitch of rivets 10 1/4 Lap of plates or width of butt straps 14 x 3/4 inner

Per centages of strength of longitudinal joint rivets 10/1 plate 8/5 Working pressure of shell by rules 169 lb Size of manhole in shell 12 x 16

Size of compensating ring 8 1/2 x 13/16 No. and Description of Furnaces in each boiler 2 plain Material Steel Outside diameter 2'-11"

Length of plain part top 3'-0" bottom 3'-0" Thickness of plates crown 11/16 bottom 11/16 Description of longitudinal joint welded No. of strengthening rings 5

Working pressure of furnace by the rules 191 Combustion chamber plates: Material Steel Thickness: Sides 4/16 Back 11/16 Top 5/8 Bottom 11/16

Pitch of stays to ditto: Sides 10 x 8 Back 10 1/4 x 9 1/2 Top 10 x 7 1/2 If stays are fitted with nuts or riveted heads nuts Working pressure by rules 166

Material of stays J &amp; D Area at smallest part 2.429 Area supported by each stay 97.25 Working pressure by rules 187 End plates in steam space:

Material Steel Thickness 3/32 Pitch of stays 13 x 18 How are stays secured DRY W. Working pressure by rules 180 Material of stays Steel

Area at smallest part 4.19 Area supported by each stay 234 Working pressure by rules 178 Material of Front plates at bottom Steel

Thickness 3/32 Material of Lower back plate Steel Thickness 3/32 Greatest pitch of stays 15 x 10 1/4 Working pressure of plate by rules 196

Diameter of tubes 3 Pitch of tubes 4 1/4 x 4 1/4 Material of tube plates Steel Thickness: Front 3/32 Back 2/32 Mean pitch of stays 10 5/8

Pitch across wide water spaces 14 Working pressures by rules 163 Girders to Chamber tops: Material Steel Depth and

thickness of girder at centre 6 3/4 x 1 3/4 Length as per rule 2'-1 Distance apart 10 Number and pitch of stays in each Two 7 1/2

Working pressure by rules 180 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

W868-0124

VERTICAL DONKEY BOILER—

Manufacturers of Steel

No. *None* Description *None*

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 \_\_\_\_\_ Stayed by \_\_\_\_\_

Diameter of uptake \_\_\_\_\_ Thickness of uptake plates \_\_\_\_\_ Thickness of water tubes \_\_\_\_\_ Dates of survey \_\_\_\_\_

SPARE GEAR. State the articles supplied:— 2 bolts & nuts for piston rods, connec. rods & main bearings, 1 set coupling bolts & nuts, 1 set air circulating feed, bilge & donkey pump valves, 2 feed check valves, 1 set rings for piston valve, & H.P. & I.P. pistons, 1 set L.P. piston springs, 2 safety valve springs, 1 set escape valve springs

The foregoing is a correct description,

For RICHARDSONS, WESTGARTH & Co. Ltd.

Manufacturer.

*J. Neatby*

Dates of Survey while building

During progress of work in shops—	1906. Nov 23. Dec 6. 19.	1907. Jan 4. 9. 16. 29. 31. Feb 5. 14. 21. 26. Mar 2. 5. 7. 12. 19. 22. 24.
During erection on board vessel—	Apr 4. 9. 10. 16. 19. 24. 30. May 2. 6. 9. 12. 15. 16. 18. 22. 25. 27. 28.	(Sld.) 07. Apr 30. May 25. 28.
Total No. of visits	410	

Is the approved plan of main boiler forwarded herewith *duplicate*

" " " donkey " " "

Dates of Examination of principal parts—Cylinders *12-3-07* Slides *27-5-07* Covers *27-5-07* Pistons *22-3-07* Rods *16-4-07*

Connecting rods *9-4-07* Crank shaft *31-1-07* Thrust shaft *13-5-07* Tunnel shafts *12-3-07* Screw shaft *9-5-07* Propeller *13-5-07*

Stern tube *13-5-07* Steam pipes tested *23-5-07* Engine and boiler seatings *30-4-07* Engines holding down bolts *23-5-07*

Completion of pumping arrangements *27-5-07* Boilers fixed *25-5-07* Engines tried under steam *25-5-07*

Main boiler safety valves adjusted *25-5-07* Thickness of adjusting washers *Port B. P  $\frac{3}{8}$  S  $\frac{3}{8}$  Starboard B. P  $\frac{3}{8}$  S  $\frac{3}{8}$*

Material of Crank shaft *Ingot S* Identification Mark on Do. *318* Material of Thrust shaft *Ingot S* Identification Mark on Do. *6188 TDS*

Material of Tunnel shafts *Ingot S* Identification Marks on Do. *6184 TDS* Material of Screw shafts *Ingot S* Identification Marks on Do. *6191 TDS*

Material of Steam Pipes *Solid drawn Copper* Test pressure *320 lb.*

General Remarks (State quality of workmanship, opinions as to class, &c.)

*This vessel's machinery has been built under Special Survey. The materials and workmanship are good and efficient. After fitting and securing on board it has been tried under full steam with satisfactory results and is now eligible in our opinion to have the notation  $\boxplus$  LMC 507*

It is submitted that this vessel is eligible for THE RECORD  $\boxplus$  LMC 507.

*J.M.*  
*26/07*

*J.S.*  
*3.6.07*

The amount of Entry Fee £ 1 : 0 : 0 When applied for.

Special £ 14 : 5 : 0 *24.5.1907*

Donkey Boiler Fee £ : : : When received.

Travelling Expenses (if any) £ : : : *27/07/07*

Committee's Minute

Assigned

TUES. JUN 4 1907

*+ Lmc 507*

*R.D. Shilston* *E.J. Stoddart*  
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.



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MACHINERY CERTIFICATE WRITTEN.