

REPORT ON MACHINERY.

No. 1852.

Port of MIDDLESBROUGH-ON-TEES.

Received at London Office THUR. 24 JUN 1909

No. in Survey held at Middlesbrough

Date, first Survey 29th Dec. 1908 Last Survey 21st June 1909

Reg. Book.

342 on the

S. S. "Retriever"

(Number of Visits 19)

Gross 674

Net 332

Master

Built at Goole

By whom built The Goole S.B. & R. Co. Ltd. When built 1909

Engines made at Middlesbrough

By whom made Richardsons, Westgarth & Co. Ltd. When made 1909

Boilers made at do

By whom made do when made 1909

Registered Horse Power

Owners West Coast of America Telegraph Co. Ltd. Port belonging to London

Nom. Horse Power as per Section 28 117

Is Refrigerating Machinery fitted for cargo purposes No

Is Electric Light fitted Yes

ENGINES, &c.—Description of Engines Compound

No. of Cylinders 2

No. of Cranks 2

Dia. of Cylinders 23", 46" Length of Stroke 30" Revs. per minute 76 Dia. of Screw shaft as per rule 9.7" as fitted 9.3" 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 3'-4"

Dia. of Tunnel shaft as per rule 8.85" as fitted 9" Dia. of Crank shaft journals as per rule 9.29" as fitted 9.2" Dia. of Crank pin 9.2" Size of Crank webs 6x14" Dia. of thrust shaft under

collars 9.2" Dia. of screw 11'-6" Pitch of Screw 14'-0" No. of Blades 4 State whether moveable No Total surface 45 sq. ft

No. of Feed pumps 2 Diameter of ditto 2.2" Stroke 18" Can one be overhauled while the other is at work Yes

No. of Bilge pumps 2 Diameter of ditto 3" Stroke 18" Can one be overhauled while the other is at work Yes

No. of Donkey Engines Two Sizes of Pumps 6x4x6 6x6x6 No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room Three 2.2" In Holds, &c. One each 2.2" to each, the 8", 1.2, 3, 4, 5 tanks

Two each 2.2" to fore and aft holds, the 2.2" to tunnel well, one each 3" to each cable tank

No. of Bilge Injections 1 sizes 4.2" Connected to condenser, or to circulating pump Pump Is a separate Donkey Suction fitted in Engine room & size Yes, 3"

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 None

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 19.5.09 of Stern Tube 9.6.09 Screw shaft and Propeller 11.6.09

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

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

Total Heating Surface of Boilers 2080 sq. ft. Forced Draft fitted No No. and Description of Boilers One S.E. Cyl. Mult.

Working Pressure 120 lbs. Tested by hydraulic pressure to 240 lbs. Date of test 4.5.09 No. of Certificate 4258

Can each boiler be worked separately Yes Area of fire grate in each boiler 56 sq. ft. No. and Description of Safety Valves to

each boiler Two direct spring Area of each valve 9.6" Pressure to which they are adjusted 125 lbs. Are they fitted with easing gear Yes

Smallest distance between boilers or uptakes and bunkers or woodwork 14" Mean dia. of boilers 14'-6" Length 10'-6" Material of shell plates Steel

Thickness 7/8" Range of tensile strength 28 1/2 - 32 Are the shell plates welded or flanged No Descrip. of riveting: cir. seams B.R. Lap

long. seams B.R. DBL 3 Riv Diameter of rivet holes in long. seams 1 1/16" Pitch of rivets 5 7/16" Lap of plates or width of butt straps 11 3/4"

Per centages of strength of longitudinal joint rivets 81.5" plate 80.9" Working pressure of shell by rules 138 lbs. Size of manhole in shell 16" x 12"

Size of compensating ring 34 1/2 x 29 x 7/8 No. and Description of Furnaces in each boiler Three plain Material Steel Outside diameter 3'-6"

Length of plain part top 6'-7 1/8" bottom 6'-4 1/2" Thickness of plates crown 1 1/16" bottom 1 1/16" Description of longitudinal joint welded No. of strengthening rings Angle at

Working pressure of furnace by the rules 151 lbs. Combustion chamber plates: Material Steel Thickness: Sides 9/16" Back 19/32" Top 9/16" Bottom 5/8"

Pitch of stays to ditto: Sides 9 1/2" x 9" Back 11" x 8 1/2" Top 9 1/2" x 8 1/2" If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 127 lbs

Material of stays Steel Diameter at smallest part 1.5" Area supported by each stay 85.5" Working pressure by rules 140 lbs. End plates in steam space:

Material Steel Thickness 13/16" Pitch of stays 16" x 15 1/2" How are stays secured B.R. x W. Working pressure by rules 126 lbs. Material of stays Steel

Diameter at smallest part 3.34" Area supported by each stay 248" Working pressure by rules 140 lbs. Material of Front plates at bottom Steel

Thickness 13/16" Material of Lower back plate Steel Thickness 3/4" Greatest pitch of stays 15 1/2" x 8" Working pressure of plate by rules 128 lbs

Diameter of tubes 3 1/4" Pitch of tubes 4 3/8" x 4 3/8" Material of tube plates Steel Thickness: Front 13/16" Back 5/8" Mean pitch of stays 9.84"

Pitch across wide water spaces 14 1/4" Working pressures by rules 125 lbs. Girders to Chamber tops: Material Steel Depth and

thickness of girder at centre 7" x 1 1/2" Length as per rule 2'-6 1/2" Distance apart 8 1/2" Number and pitch of stays in each 2 @ 9 1/2"

Working pressure by rules 144 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

VERTICAL DONKEY BOILER— Manufacturers of Steel

No. <i>None</i>	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	Stayed by		
Diameter of uptake	Thickness of uptake plates	Thickness of water tubes	Dates of survey	

SPARE GEAR. State the articles supplied:— *Two top & two bottom-end connecting rod bolts & nuts. Two main bearing bolts & nuts. One set of coupling bolts & nuts. One set of feed & bilge pump valves. Two feed check valves. Assorted bolts & nuts etc.*

The foregoing is a correct description,

For RICHARDSONS, WESTGARTH & Co. Ltd.

H. Jackson. Manufacturer.

Dates of Survey while building	During progress of work in shops—	<i>19 08. Dec. 29. 19 09. Jan. 7. 12. 13. 19. 22. 25. 27. Feb. 1. 3. 4. 8. 11. 12. 15. 22. 23. 26. Mar. 6. 8. 16. 19. 25. 29. Apr.</i>
	During erection on board vessel—	<i>28. 29. May 4. 13. 18. 20. 28. June 9. 11. 15. 17. 21.</i>
	Total No. of visits	<i>39</i>

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

Dates of Examination of principal parts—	Cylinders	<i>15. 4. 09</i>	Slides	<i>13. 5. 09</i>	Covers	<i>13. 5. 09</i>	Pistons	<i>29. 4. 09</i>	Rods	<i>29. 4. 09</i>	
Connecting rods	<i>29. 4. 09</i>	Crank shaft	<i>10. 2. 09</i>	Thrust shaft	<i>13. 5. 09</i>	Tunnel shafts	<i>13. 5. 09</i>	Screw shaft	<i>30. 4. 09</i>	Propeller	<i>13. 5. 09</i>
Stern tube	<i>13. 5. 09</i>	Steam pipes tested	<i>15. 6. 09</i>	Engine and boiler seatings	<i>19. 5. 09</i>	Engines holding down bolts	<i>15. 6. 09</i>				
Completion of pumping arrangements	<i>17. 6. 09</i>	Boilers fixed	<i>15. 6. 09</i>	Engines tried under steam	<i>17. 6. 09</i>						
Main boiler safety valves adjusted	<i>17. 6. 09</i>	Thickness of adjusting washers	<i>P 7/8" S 7/8"</i>								
Material of Crank shaft	<i>Steel</i>	Identification Mark on Do.	<i>4763 C.T.A.</i>	Material of Thrust shaft	<i>Steel</i>	Identification Mark on Do.	<i>4383</i>				
Material of Tunnel shafts	<i>Steel</i>	Identification Marks on Do.	<i>3009 P.A. 4384 K.H.</i>	Material of Screw shafts	<i>Steel</i>	Identification Marks on Do.	<i>476</i>				
Material of Steam Pipes	<i>Solid drawn copper</i>	Test pressure	<i>240 lbs</i>								

General Remarks (State quality of workmanship, opinions as to class, &c. *The Engines and Boiler of this vessel have been constructed under Special Survey, are of good material and workmanship, and have been fitted and secured on board in accordance with the Rules. They are now in good working condition and in our opinion eligible to have the notation of +LMC Y., 09 in the Register Book.*

This vessel has now sailed for Gool for completion of the hull & fitting of Electric Light Installation.

It is submitted that this vessel is eligible for THE RECORD. +LMC. Y. 09. *See light.*

The amount of Entry Fee..	£ 2 : 0 :	When applied for,	<i>23. 6. 09</i>
Special ..	£ 17 : 11 :	When received	<i>28/6/09</i>
Donkey Boiler Fee ..	£ :		
Travelling Expenses (if any) £	:		

I Kerr & James Barclay
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping

Committee's Minute	<i>TUES. 27 JUL 1909</i>
Assigned	<i>thmc 7.09</i>