

REPORT ON MACHINERY.

Port of MIDDLESBROUGH-ON-TEES.

Received at London Office MUN. 20 JUL 1908

No. in Survey held at Stockton

Date, first Survey 20th Dec 1907 Last Survey July 8th 1908

Reg. Book.

on the Steel S.S. "Crossington Court"

(Number of Visits 43)

Master J W Cleghorn Built at Stockton By whom built Richardson Duck & Co

Tons { Gross 4395.64
Net 2715.92
When built 1908

Engines made at Stockton By whom made Polair & Co Ltd

when made 1908

Boilers made at Stockton By whom made Polair & Co Ltd

when made 1908

Registered Horse Power Owners Haldin & Co Ltd

Port belonging to London

Nom. Horse Power as per Section 28 350

Is Refrigerating Machinery fitted for cargo purposes No

Is Electric Light fitted No

ENGINES, &c.—Description of Engines Direct acting Triple expansion No. of Cylinders 3 No. of Cranks 3

Dia. of Cylinders 26-42 1/2-69 1/2 Length of Stroke 45 Revs. per minute 56 Dia. of Screw shaft 1 1/2 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 No 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 No Length of stern bush 5'-4"

Dia. of Tunnel shaft 1 3/4 Dia. of Crank shaft journals 1 3/8 Dia. of Crank pin 1 1/2 Size of Crank webs 22 3/4 x 9 1/4 Dia. of thrust shaft under collars 1 1/2 Dia. of screw 1 7/8 Pitch of Screw 17-0 No. of Blades 4 State whether moceable No Total surface 86 1/2 sq ft

No. of Feed pumps 2 Diameter of ditto 3 1/4 Stroke 33 Can one be overhauled while the other is at work Yes

No. of Bilge pumps 2 Diameter of ditto 4 3/4 Stroke 33 Can one be overhauled while the other is at work Yes

No. of Donkey Engines Two Sizes of Pumps Four 4x6 Ballast 10x15 No. and size of Suctions connected to both Bilge and Donkey pumps In Engine Room Three 3 1/2 diam In Holds, &c. Two each Hold 3 1/2 diam

One 3 in dia tank below boilers.

No. of Bilge Injections 1 sizes 6 1/4 Connected to condenser, or to circulating pump CR Is a separate Donkey Suction fitted in Engine room & size Yes, 4"

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 No

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 29-2-06 of Stern Tube 29-2-06 Screw shaft and Propeller 16-6-08

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

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

Total Heating Surface of Boilers 5406 sq ft Is Forced Draft fitted No No. and Description of Boilers 2, Cyl Tubular

Working Pressure 180 lb Tested by hydraulic pressure to 360 lb Date of test 7-2-08 No. of Certificate 4092

Can each boiler be worked separately Yes Area of fire grate in each boiler 63 1/2 sq ft No. and Description of Safety Valves to each boiler 2 spring Area of each valve 0.29 sq ft Pressure to which they are adjusted 185 lb Are they fitted with easing gear Yes

Smallest distance between boilers or uptakes and bunkers or woodwork 18" Dia. of boilers 16-6" Length 11-0" Material of shell plates Steel

Thickness 1 7/16" Range of tensile strength 20/32 Are the shell plates welded or flanged No Descrip. of riveting: cir. seams F.S. Riv.

long. seams D.B. Straps Diameter of rivet holes in long. seams 1 5/16" Pitch of rivets 2 1/2" Lap of plates or width of butt straps 1-7/4"

Per centages of strength of longitudinal joint 86.3 Working pressure of shell by rules 102 lb Size of manhole in shell 17 x 13

Size of compensating ring 31 x 27 x 1 5/16" No. and Description of Furnaces in each boiler 3 Marine Suspension Material Steel Outside diameter 4'-1"

Length of plain part top 6-9 3/4" Thickness of plates 9/16" Description of longitudinal joint Welded No. of strengthening rings 1

Working pressure of furnace by the rules 192 lb Combustion chamber plates: Material Steel Thickness: Sides 9/16" Back 1/16" Top 1/16" Bottom 13/16"

Pitch of stays to ditto: Sides 9 1/4 x 7 3/4" Back 9 3/4 x 9 1/2" Top 9 3/4 x 7 3/4" If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 103 lb

Material of stays Steel Diameter at smallest part 1 9/16" Area supported by each stay 88.9 sq ft Working pressure by rules 194 lb End plates in steam space: Material Steel Thickness 5/16" Pitch of stays 2 1/2 x 2 1/2" How are stays secured Nuts Working pressure by rules 106 lb Material of stays Steel

Diameter at smallest part 3 1/4" Area supported by each stay 462.2 sq ft Working pressure by rules 186 lb Material of Front plates at bottom Steel

Thickness 1/2" Material of Lower back plate Steel Thickness 1 1/2" Greatest pitch of stays 10 1/2 x 9 1/2" Working pressure of plate by rules 103 lb

Diameter of tubes 3 1/2" Pitch of tubes 4 3/4 x 4 7/8" Material of tube plates Steel Thickness: Front 1 1/2" Back 1 3/16" Mean pitch of stays 10 3/4"

Pitch across wide water spaces 1 1/2" Working pressures by rules 194 lb Girders to Chamber tops: Material Steel Depth and thickness of girder at centre 7 3/4 x 1 7/8" Length as per rule 30 Distance apart 9 3/4" Number and pitch of stays in each Three 7 3/4"

Working pressure by rules 184 lb Superheater or Steam chest; how connected to boiler None Can the superheater be shut off and the boiler worked separately Yes

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

W685-0092

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 _____ Stayed by _____

Diameter of uptake _____ Thickness of uptake plates _____ Thickness of water tubes _____ Dates of survey _____

SPARE GEAR. State the articles supplied:— Top and bottom end connecting rod bolts and nuts. Two main bearing bolts. Set of coupling bolts. Set of feed and bilge pump valves. 4 x M.P. piston rings. 8 piston springs. Propeller & propeller shaft. bolts & nuts assorted etc.

The foregoing is a correct description,
 Geo. Milner, Manufacturer.

Dates of Survey while building	During progress of work in shops - -	1904 Dec 20.24	1905 Jan 6.7.9.10.15.14.20.21.22.24.27.28.30.31	Feb 3.5.6.7.10.13
	During erection on board vessel - -	Feb 14.16.21.26	Mar 2.6.11.12.14.16.26	May 4 June 2.16.19.24.26.29.30 July 3.7.8
	Total No. of visits	43	Is the approved plan of main boiler forwarded herewith <i>Yes</i>	

Dates of Examination of principal parts—Cylinders 6-1-08 Slides 6-2-08 Covers 9-1-08 Pistons 17-1-08 Rods 22-1-08

Connecting rods 27-1-08 Crank shaft 12-3-08 Thrust shaft 31-1-08 Tunnel shafts 31-1-08 Screw shaft 18-2-08 Propeller 11-2-08

Stern tube 27-1-08 Steam pipes tested 17-6-08 Engine and boiler seatings 14-2-08 Engines holding down bolts 24-6-08

Completion of pumping arrangements 30-6-08 Boilers fixed 24-6-08 Engines tried under steam 30-6-08

Main boiler safety valves adjusted 30-6-08 Thickness of adjusting washers 5/16 3/8 1/2 5/8 3/4 7/8 1 1 1/8 1 1/4 1 1/2 1 3/4 2

Material of Crank shaft *Steel* Identification Mark on Do. 6430 Material of Thrust shaft *Steel* Identification Mark on Do. 6409

Material of Tunnel shafts *Steel* Identification Marks on Do. 6408 Material of Screw shafts *Steel* Identification Marks on Do. 6419

Material of Steam Pipes *Copper, solid drawn* Test pressure 400 lb. $\frac{1}{2}$

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

The engines and boilers of this vessel have been constructed under special survey. The materials and workmanship are good and efficient and when tested under steam were found satisfactory.

In my opinion the machinery is now eligible for the notation **L.M.C. 7.08.** in the Register Book.

It is submitted that this vessel is eligible for THE RECORD. **L.M.C. 7.08.**

H.C. 20-7-08

Geo. A. Milner
 20-7-08

The amount of Entry Fee..	£ 3 : 0 : 0	When applied for,
Special ..	£ 34 : 18 : 0	16.7.1908
Donkey Boiler Fee ..	£ :	When received,
Travelling Expenses (if any) £	:	18.7.1908

Geo. A. Milner
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute
 Assigned
 TUES. 21 JUL 1908
 + L.M.C. 7.08

MACHINERY CERTIFICATE WRITTEN

