

REPORT ON MACHINERY.

Newcastle-on-Tyne 57167
No. 5894

Port of MIDDLESBROUGH-ON-TEES

Received at London Office 051 III 23 FRI 19

No. in Survey held at Stockton-on-Tees Date, first Survey 3rd May Last Survey 16th July 1909

Reg. Book. on the Steel Screw Steamer ERRINGTON COURT (Number of Visits 32)

Master Built at Newcastle By whom built Northumberland S.B. Co. Ltd. S.S. No. 162 Tons Gross 4461 Net 2752 When built 1909

Engines made at Stockton By whom made Messrs Blair & Co. Ltd. when made 1909

Boilers made at Stockton By whom made Messrs Blair & Co. Ltd. when made 1909

Registered Horse Power Owners Haldinstein & Co. Ltd. Port belonging to London
Nom. Horse Power as per Section 28 427 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted no.

ENGINES, &c.—Description of Engines Triple Expansion No. of Cylinders 3 No. of Cranks 3

Dia. of Cylinders 26-42-70 Length of Stroke 48 Revs. per minute — Dia. of Screw shaft as per rule 14.58 Material of screw shaft as fitted 15.74 (Ingt. 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 ✓ 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 ✓ Length of stern bush 5'-4" ✓

Dia. of Tunnel shaft as per rule 12.98 as fitted 13.74 Dia. of Crank shaft journals as per rule 13.63 as fitted 14.4 Dia. of Crank pin 14.7 Size of Crank webs 28 1/2 x 9 1/2 Dia. of thrust shaft under collars 14 3/4 Dia. of screw 17'-6" Pitch of Screw 17'-6" No. of Blades 4 State whether moveable no Total surface 96 sq

No. of Feed pumps 2 Diameter of ditto 3 1/2" Stroke 34 Can one be overhauled while the other is at work yes ✓

No. of Bilge pumps 2 Diameter of ditto 5" Stroke 34 Can one be overhauled while the other is at work yes ✓

No. of Donkey Engines 2 Sizes of Pumps Ballant - 12 x 10 x 13 Feed - 8 x 4 x 8 No. and size of Suctions connected to both Bilge and Donkey pumps In Engine Room 3 @ 3 1/2" + Two in dry tank U.B. @ 3 1/2" In Holds, &c. No. 1 - 2 @ 3 1/2" ; No. 2 - 2 @ 3 1/2" ; No. 3 - 2 @ 3 1/2" ; No. 4 - 2 @ 3 1/2" ; Tunnel well - 1 @ 2 1/2"

No. of Bilge Injections 1 sizes 6 3/4" Connected to circulating pump yes ✓ 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 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 suction to No. 1 & 2 holds How are they protected wood ceiling

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 14/6/09 of Stern Tube 14/6/09 Screw shaft and Propeller 5-7-09

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

BOILERS, &c.—(Letter for record (5)) Manufacturers of Steel Messrs J. Spencer & Sons

2 main & 1 aux converted to a donkey boiler 3.37. 2 main & one auxiliary

Total Heating Surface of Boilers 7378 Is Forced Draft fitted no No. and Description of Boilers 2 Single Ended

Working Pressure 185 Tested by hydraulic pressure to 360 Date of test 30.6.09 No. of Certificate 4289

Can each boiler be worked separately yes ✓ Area of fire grate in each boiler 70.8 sq No. and Description of Safety Valves to each boiler 2 direct spring Area of each valve 8.29 sq 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 4 ft; ext. diam. of boilers 16'-10 1/2" Length 11'-8 1/2" Material of shell plates steel

Thickness 1 1/2" Range of tensile strength 28-32 Are the shell plates welded or flanged no Descrip. of riveting: cir. seams Lap. 8-R. long. seams 2 Riv. 3 Riv Diameter of rivet holes in long. seams 1 1/8" Pitch of rivets 9 1/2" Lap of plates or width of butt straps 20% x 1 1/2"

Per centages of strength of longitudinal joint rivets 86.3 plate 85.5 Working pressure of shell by rules 183 lbs. Size of manhole in shell 16" x 12"

Size of compensating ring 7 1/4 x 1 1/2" No. and Description of Furnaces in each boiler 3 (Morison) Conn Material steel Outside diameter 50 1/2"

Length of plain part top 12 bottom 9 1/2 Thickness of plates crown 12 bottom 9 1/2 Description of longitudinal joint welded No. of strengthening rings ✓

Working pressure of furnace by the rules 186 Combustion chamber plates: Material steel Thickness: Sides 21/32" Back 21/32" Top 21/32" Bottom 57/64"

Pitch of stays to ditto: Sides 9 1/4 x 8 1/4" Back 9 1/2 x 8 1/4" Top 9 1/2 x 8 1/4" If stays are fitted with nuts or riveted heads none ✓ Working pressure by rules 181 lbs.

Material of stays steel Diameter at smallest part 1.59 Area supported by each stay 82 sq Working pressure by rules 218 End plates in steam space: Material steel Thickness 1 1/2" Pitch of stays 20" x 22" How are stays secured nuts & washers Working pressure by rules 184 Material of stays steel

Diameter at smallest part 2.16 Area supported by each stay 440 Working pressure by rules 185 Material of Front plates at bottom steel

Thickness 1 1/2" Material of Lower back plate steel Thickness 1 1/2" Greatest pitch of stays 17 1/4 x 9 1/2 Working pressure of plate by rules 285

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

Pitch across wide water spaces 14 1/2" Working pressures by rules 181 Girders to Chamber tops: Material steel Depth and thickness of girder at centre 8 1/2 x 2" Length as per rule 2'-10" Distance apart 9 1/2" Number and pitch of stays in each 3 @ 8 1/4"

Working pressure by rules 183 Superheater or Steam chest; ~~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 See Report Auxiliary Boiler attached.*

No. _____ Description _____
 Made at *W. 110* By whom made _____ When made _____ Where fixed _____
 Working pressure *16.25* 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 each of top end, bottom end & main bearing bolts and nuts: one set of coupling bolts: one set feed and bilge pump valves: one set piston rings each cylinder: assorted bolts and nuts & iron of various sizes: One ingot steel tail shaft with continuous liner, one cast iron propeller.*

The foregoing is a correct description,

FOR *BLAIR & CO., LIMITED.* Manufacturer.

Dates of Survey while building
 During progress of work in shops— *1909 Jan 9-6-11-13-14-14-8-10-24-27-28 June 2-5-9-11-14-16-17-22-24-27 July 1-8-5-6-10-13*
 During erection on board vessel— *1909 July 5-7-10-13-16*
 Total No. of visits *22*

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

Dates of Examination of principal parts—Cylinders *16.6.09* Slides *21.6.09* Covers *21.6.09* Pistons *21.6.09* Rods *16.6.09*
 Connecting rods *16.6.09* Crank shaft *5.7.09* Thrust shaft *2.6.09* Tunnel shafts *3.5.09* Screw shaft *29.6.09* Propeller *16.6.09*
 Stern tube *5.6.09* Steam pipes tested *6.7.09* Engine and boiler seatings _____ Engines holding down bolts *9.7.09*
 Completion of pumping arrangements *13.7.09* Boilers fixed *13.7.09* Engines tried under steam *16.7.09*
 Main boiler safety valves adjusted *16.7.09* Thickness of adjusting washers *Star Blk - PU 3/8, 50 1/2*
 Material of Crank shaft *steel* Identification Mark on Do. *6496* Material of Thrust shaft *steel* Identification Mark on Do. *6612-N*
 Material of Tunnel shafts *S. Steel* Identification Marks on Do. *6612-N* Material of Screw shafts *S. Steel* Identification Marks on Do. *6612-N*
 Material of Steam Pipes *Solid drawn copper* *4 @ 5 1/2 Bore x 1/2"* Test pressure *400 lbs.*

General Remarks (State quality of workmanship, opinions as to class, &c.)
The engines and boilers have been built under Special Survey in accordance with the Rules. The materials and workmanship are sound and good. The boilers and main steam pipes have been tested by hydraulic pressure with satisfactory results, and the engines and boilers examined under steam at the wharf and found satisfactory.

The vessel has returned to Newcastle for completion of the survey on the hull. The machinery of this vessel is now in a good and safe working condition and renders the vessel eligible in our opinion to have the notation of LMC in the Register Book

It is submitted that this vessel is eligible for THE RECORD. + LMC. 7.09.

The amount of Entry Fee. £ *3-8-0* When applied for, _____
 Special _____ £ *41-7-0* *22nd July 1909*
 Donkey Boiler Fee. £ _____
 Travelling Expenses (if any) £ _____

Wm Morrison & A. McLean
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute *FRI. 27 AUG 1909*

Assigned *+ LMC 7.09*

Newcastle

Certificate (if required) to be sent to

(The Surveyors are requested to write on or below the space for Committee's Minute.)