

REPORT ON MACHINERY.

No. 3947

Port of MIDDLESBROUGH-ON-TEES.

Received at London Office 18 AUG 1904

No. in Survey held at Middlesbrough Date, first Survey 29 Jan Last Survey 12th Aug 1904
 Reg. Book. 1471 on the S S "Stork" (Number of Visits 45) Tons {Gross 2029
 Master J. W. Dyer Built at Stockton By whom built Ropner & Son When built 1904
 Engines made at Middlesbrough By whom made Richardsons Westgarth & Co. Ltd when made 1904
 Boilers made at do By whom made ditto when made 1904
 Registered Horse Power 257 Owners General Steam Nav. Co. Ltd Port belonging to London
 Nom. Horse Power as per Section 28 257 Is Refrigerating Machinery fitted no Is Electric Light fitted no

ENGINES, &c.—Description of Engines Triple expansion No. of Cylinders 3 No. of Cranks 3
 Dia. of Cylinders 22-35-59 Length of Stroke 39 Revs. per minute 11.8 Dia. of Screw shaft 12 Material of screw shaft Iron
 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 yes Length of stern bush 4-5 1/2
 Dia. of Tunnel shaft 10.6 as per rule 10.582 Dia. of Crank shaft journals 11.131 as per rule 11.131 Dia. of Crank pin 11 1/2 Size of Crank webs 8"x18" Dia. of thrust shaft under
 collars 11 1/2 Dia. of screw 14-3 Pitch of screw 14-0 No. of blades 4 State whether moveable no Total surface 62 sq ft
 No. of Feed pumps 2 Diameter of ditto 3 1/2 Stroke 21 Can one be overhauled while the other is at work yes
 No. of Bilge pumps 2 Diameter of ditto 4 Stroke 21 Can one be overhauled while the other is at work yes
 No. of Donkey Engines 2 duplex Sizes of Pumps For 8"x6"x18" Ball 6"x8"x10" No. and size of Suctions connected to both Bilge and Donkey pumps
 In Engine Room Three of 2 1/2" dia. In Holds, &c. Two of 2 1/2" in each hold
One of 3" dia in tunnel
 No. of bilge injections 1 sizes 6" Connected to condenser, or to circulating pump C.P. 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
 When were stern tube, propeller, screw shaft, and all connections examined in dry dock New vessel Is the screw shaft tunnel watertight see ship report
 Is it fitted with a watertight door yes worked from upper grating

BOILERS, &c.—(Letter for record (T)) Total Heating Surface of Boilers 4338 sq ft Is forced draft fitted no
 No. and Description of Boilers Two: Cyl. Mult. Single ended Working Pressure 170 lb Tested by hydraulic pressure to 340 lb
 Date of test 20.5.04 Can each boiler be worked separately yes Area of fire grate in each boiler 65 1/2 sq ft No. and Description of safety valves to
 each boiler 2 direct spring Area of each valve 962 sq in Pressure to which they are adjusted 175 lbs Are they fitted with easing gear yes
 Smallest distance between boilers or uptakes and bunkers or woodwork 15" Mean dia. of boilers 15-0 Length 11-0 Material of shell plates Steel
 Thickness 1 3/16 Range of tensile strength 28/32 Are they welded or flanged no Descrip. of riveting: cir. seams D.R. Lap long. seams D Butt Strap
 Diameter of rivet holes in long. seams 1 3/16 Pitch of rivets 8" rows 4" 2 rows Lap of plates or width of butt straps 18"x1 1/2"
 Per centages of strength of longitudinal joint rivets 87 Working pressure of shell by rules 175 lbs Size of manhole in shell 17"x13"
 plate 85.1 Size of compensating ring 8 1/2"x1 1/2" each side No. and Description of Furnaces in each boiler 3 Corrugated Material Steel Outside diameter 3-9 3/4
 Length of plain part 7.6 Thickness of plates 1 3/16 Description of longitudinal joint welded No. of strengthening rings 1
 Working pressure of furnace by the rules 178 lb Combustion chamber plates: Material Steel Thickness: Sides 4" Back 5" Top 4" Bottom 4"
 Pitch of stays to ditto: Sides 8 1/4"x10 1/2" Back 8 1/4"x8 1/2" Top 8 1/2"x10 1/2" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 176 lb
 Material of stays Steel Area at smallest part 2.09 sq in Area supported by each stay 84.5 sq in Working pressure by rules 185 lb End plates in steam space:
 Material Steel Thickness 1 3/32 Pitch of stays 15"x21" How are stays secured D.R. & W. Working pressure by rules 170 lb Material of stays Steel
 Area at smallest part 5.90 sq in Area supported by each stay 315.7-283 sq in Working pressure by rules 173 lb Material of Front plates at bottom Steel
 Thickness 7/8 Material of Lower back plate Steel Thickness 7/8 Greatest pitch of stays 8 3/4"x15" Working pressure of plate by rules 174 lb
 Diameter of tubes 3 1/4 Pitch of tubes 4 1/2"x4 1/2" Material of tube plates Steel Thickness: Front 1 3/32 Back 27/32 Mean pitch of stays 11 1/4"
 Pitch across wide water spaces 14 1/4 Working pressures by rules 211 lb Girders to Chamber tops: Material Steel Depth and
 thickness of girder at centre 9"x1 3/4 Length as per rule 2-5 3/4 Distance apart 10 1/2 Number and pitch of Stays in each two 8 1/2
 Working pressure by rules 211 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

DONKEY BOILER— No. *One* Description *Vertical with 6 cross tubes & side uptake*
Made at *Middlesbrough* By whom made *Richardsons Westgarth & Co.* When made *28-6-04* Where fixed *on deck*
Working pressure *100 lb* Tested by hydraulic pressure to *200 lb* No. of Certificate *3248* Fire grate area *28 sq ft* Description of safety valves *direct spring*
No. of safety valves *2* Area of each *707* Pressure to which they are adjusted *90 lb* If fitted with easing gear *yes* If steam from main boilers can enter the donkey boiler *no* Dia. of donkey boiler *7'-0"* Length *14'-6"* Material of shell plates *Steel* Thickness *2 7/16"* Range of tensile strength *27/32* Descrip. of riveting long. seams *DR lap* Dia. of rivet holes *1 1/8"* Whether punched or drilled *drilled* Pitch of rivets *3"*
Lap of plating *4 5/8"* Per centage of strength of joint *68 1/2* Rivets *69.5* Thickness of shell crown plates *1 1/8"* Radius of do. *flat* No. of stays to do. *7*
Dia. of stays *2 3/4"* Diameter of furnace Top *5'-1"* Bottom *6'-4"* Length of furnace *6'-4 1/2"* Thickness of furnace plates *1 1/8"* Description of joint *SR lap* Thickness of furnace crown plates *5/8"* Stayed by *as above* Working pressure of shell by rules *110 lb*
Working pressure of furnace by rules *124 lb* Diameter of uptake *15"* Thickness of uptake plates *5/8"* Thickness of water tubes *1/2"*

SPARE GEAR. State the articles supplied:— *2 Bolts & nuts for connecting rods, piston rods & main bearings & one set for couplings 1 set feed & bilge pump valves 1 set feed check valves 1 set H.P. & I.P. piston rings 12 piston bolts 1 Air pump head valve, bucket & rod. 1 screw pump shaft. Escape valve springs. Bolts & nuts.*

The foregoing is a correct description,

For RICHARDSONS, WESTGARTH & Co. Ltd.

Manufacturer.

H. Jackson

Dates of Survey while building
During progress of work in shops—
During erection on board vessel—
Total No. of visits—

Jan 29 Feb 2. 10 Mar 7. 11. 18. 24. 29. 31. Apr 7. 12. 14. 18. 24. 25. 26. 29. May 11. 17. 18. 19. 20. 25. 26

28. 31. June 6. 7. 7. 8. 13. 20. 23. 27. 30. Jul 10. 17. 8. 24. 26. 29 Aug 2. 4. 5. 1904

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

" " " donkey " " *yes*

General Remarks (State quality of workmanship, opinions as to class, &c. *The machinery is not placed aft.*

These engines and boilers have been built under special survey. The materials and workmanship are good and efficient. Small defects in the welding of two furnaces of the main boilers have been repaired by a cover patch in one case and by studding in the other. See Secretary's letter of 9th June 1904. After fitting and securing on board the machinery has been tried under steam and found satisfactory and is now in good and safe working condition and eligible in my opinion to have the record **LMC 8.04.**

It is submitted that this vessel is eligible for THE RECORD. :- LMC 8.04

Bale.

18.8.04

18.8.04

The amount of Entry Fee. £ *2:-* When applied for, *5.8.1904*
Special .. £ *32:17:-*
Donkey Boiler Fee .. £ *:* When received, *17.8.1904*
Travelling Expenses (if any) £ *:*

R. D. Shilston

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

Committee's Minute

FRI. 19 AUG 1904

Assigned

+ LMC 8.04

MACHINERY CERTIFICATE
WRITTEN.



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Foundation