

REPORT ON MACHINERY.

No. 3432

Lth N^o 10543.Port of MIDDLESBROUGH-ON-TEES.

LUES. 24 NOV 1903

Received at London Office

19

No. in Survey held at Stockton Date, first Survey 25th May Last Survey 14th Nov 1903
 Reg. Book. 45 on the Steel S.S. "Cabo Torinana" (Number of Visits 16)
 Master By whom built James & Greenock St. Gd. Co Tons { Gross 1520
 Engines made at Stockton By whom made Blair & Co. Ltd Net 995-18
 Boilers made at Stockton By whom made Blair & Co. Ltd when made 1903
 Registered Horse Power 133 Owners Ybarra & Co Port belonging to Seville
 Nom. Horse Power as per Section 28 133 Is Refrigerating Machinery fitted No Is Electric Light fitted No

ENGINES, &c.—Description of Engines Direct Acting Trip Expansion No. of Cylinders 3 No. of Cranks 3
 Dia. of Cylinders 18"-29½"-48½" Length of Stroke 33 Revs. per minute 65 Dia. of Screw shaft as per rule 10" Material of 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 — If the liner does not fit tightly at the part
 between the bearings in the stern tube, is the space charged with a plastic — soluble in water and non-corrosive — If two
 liners are fitted, is the shaft lapped or protected between the liners — Length of stern bush 3'-10"
 Dia. of Tunnel shaft as per rule 8.64 Dia. of Crank shaft journals as per rule 9.06 Dia. of Crank pin 10" Size of Crank webs 16¼x6¼ Dia. of thrust shaft under
 collars 9¾ Dia. of screw 13-0 Pitch of screw 13-6 No. of blades 4 State whether moveable No Total surface 48 ft
 No. of Feed pumps 2 Diameter of ditto 2½ Stroke 24 Can one be overhauled while the other is at work Yes
 No. of Bilge pumps 2 Diameter of ditto 3½ Stroke 24 Can one be overhauled while the other is at work Yes
 No. of Donkey Engines Two Sizes of Pumps Feed 4x8 Bilge 9x7½ No. and size of Suctions connected to both Bilge and Donkey pumps
 In Engine Room Three 2½ diameter In Holds, &c. Two in each hold
2½ diameter funnel and hold shell 2½
 No. of bilge injections 1 sizes 4½ 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 —
 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
 When were stern tube, propeller, screw shaft, and all connections examined in dry dock See Vessel Is the screw shaft tunnel watertight See ship
 Is it fitted with a watertight door Yes worked from Top platform Report

OILERS, &c.— (Letter for record (S.)) Total Heating Surface of Boilers 1952 ft Is forced draft fitted No
 No. and Description of Boilers Two Cyl. Multitubular Single ended Working Pressure 160 lb Tested by hydraulic pressure to 320 lb
 Date of test 4-9-03 Can each boiler be worked separately Yes Area of fire grate in each boiler 26¾ No. and Description of safety valves to
 each boiler Two Spring Area of each valve 4.9 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 24 Gen. dia. of boilers 10-0 Length 10-0 Material of shell plates Steel
 Thickness 7/8 Range of tensile strength 27/32 Are they welded or flanged No Descrip. of riveting: cir. seams 18 7/8 in long. seams 2 Butts Staps
 Diameter of rivet holes in long. seams 1" Pitch of rivets 1 in 6 7/8 Lap of plates or width of butt straps 1'-2¾
 Per centages of strength of longitudinal joint 97 Working pressure of shell by rules 166.5 lb Size of manhole in shell 17x13
 Size of compensating ring 31x27x7/8 No. and Description of Furnaces in each boiler 2 Brown Material S Outside diameter 2'-8½
 Length of plain part top 6-4 Thickness of plates crown 7/16 1/4 Description of longitudinal joint Welded No. of strengthening rings —
 Working pressure of furnace by the rules 187 lb Combustion chamber plates: Material S Thickness: Sides 5 1/8 32 Back 5 1/8 32 Top 5 1/8 32 Bottom 1 1/16
 Pitch of stays to ditto: Sides 9x9¾ Back 9¼x9¼ Top 9½x9½ If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 164 lb
 Material of stays S Diameter at smallest part 1 9/16 Area supported by each stay 85.5 Working pressure by rules 201 lb End plates in steam space:
 Material S Thickness 1 1/32 Pitch of stays 18½x16 How are stays secured 72x10 Working pressure by rules 163 lb Material of stays S
 Diameter at smallest part 2 3/4 Area supported by each stay 296 Working pressure by rules 200 lb Material of Front plates at bottom S
 Thickness 1" Material of Lower back plate S Thickness 1" Greatest pitch of stays 16¾ Working pressure of plate by rules 162 lb
 Diameter of tubes 3¼ Pitch of tubes 44½x47½ Material of tube plates S Thickness: Front 1 Back 13/16 Mean pitch of stays 9½
 Pitch across wide water spaces 14" Working pressures by rules 196 lb Girders to Chamber tops: Material S Depth and
 thickness of girder at centre 6¾x13 Length as per rule 25¼ Distance apart 9½ Number and pitch of Stays in each Two 9½
 Working pressure by rules 223 lb Superheater or Steam chest; how connected to boiler — 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 —

002816-002824-0136

DONKEY BOILER— No. *One* Description *Vertical 4 cross tubes.*
 Made at *Stockton* By whom made *Niley Bros* When made *1903* Where fixed *Main SR*
 Working pressure *90 lb* tested by hydraulic pressure to *180 lb* No. of Certificate *3074* Fire grate area *23 1/2* Description of safety valves *Spring*
 No. of safety valves *2* Area of each *3.9* 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 *6'-6"* Length *14'-0"* Material of shell plates *Steel* Thickness *15/32* Range of tensile strength *27/32* Descrip. of riveting long. seams *8 R lap* Dia. of rivet holes *15/16* Whether punched or drilled *X* Pitch of rivets *3 1/4*
 Lap of plating *4 3/4* Per centage of strength of joint *71.2* Thickness of shell crown plates *9/16* Radius of do. *6 ft* No. of Stays to do. *7*
 Dia. of stays *1 1/2* Diameter of furnace Top *4'-11"* Bottom *5'-6 1/4"* Length of furnace *5'-7"* Thickness of furnace plates *5/8* Description of joint *8 R lap* Thickness of furnace crown plates *9/16* Stayed by *a struts* Working pressure of shell by rules *98 lb*
 Working pressure of furnace by rules *90.7 lb* Diameter of uptake *16"* Thickness of uptake plates *7/16* Thickness of water tubes *3/8*

SPARE GEAR. State the articles supplied:— *H T slide valve spindle. Set Air pump valves H & M T piston (Namebottom) imp. Top & bottom end connecting and both & make set of coupling bolts. Set of feed & bilge pump & bottom valve. Spare propeller. Both & nuts mounted.*
 The foregoing is a correct description,
FOR BLAIR & CO., LIMITED.
W. Borrie Manufacturer. of main engines & boilers.

SECRETARY. 1903: May 25-29. June 23. July 10-21-24-29. Oct. 26-28. Nov. 2-5-5-6-10-12-14
 Dates of Survey while building { During progress of work in shops - - }
 { During erection on board vessel - - }
 Total No. of visits *mdt (16)* Is the approved plan of main boiler forwarded herewith *no*
 " " " donkey " " " *no*

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

This vessel machinery has been constructed under special survey. The materials and workmanship have been found good and efficient and when tested under steam were found satisfactory, and in my opinion now eligible for the notification + L.M.C. 11.03. in the Register Book.

It is submitted that this vessel is eligible for THE RECORD L.M.C. 11.03.

msd 24.11.03

24.11.03

The amount of Entry Fee... £ 2 : 0 :
 Special ... £ 19 : 19 :
 Donkey Boiler Fee ... £ : :
 Travelling Expenses (if any) £ : 10 : 6
 at *Leith*

FRI. 27 NOV 1903

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



Committee's Minute
 Assigned
 + L.M.C. 11.03
 MACHINERY CERTIFICATE WRITTEN.

Certificate (if required) to be sent to Leith