

## REPORT ON MACHINERY

Mtd. No. 5120  
Sta. No. 23358

TUES. 23 JUL 1907

Port of MIDDLESBROUGH-ON-TEES

Received at London Office

No. in Survey held at Stockton & Sunderland Date, first Survey 24<sup>th</sup> February Last Survey 19<sup>th</sup> July 1907  
 Reg. Book. 4 on the Steel S.S. "Moravitz" (Number of Visits 31) Tons { Gross 4799.50  
 Net 3113.42  
 Master Emil Gilliam Built at Sunderland By whom built J. L. Thompson & Son Ltd When built 1907  
 Engines made at Stockton By whom made Polain & Co. Ltd when made 1907  
 Boilers made at Stockton By whom made Polain & Co. Ltd when made 1907  
 Registered Horse Power \_\_\_\_\_ Owners Atlantic Ste. Am. de Mar. Mante Port belonging to Fiume  
 Nom. Horse Power as per Section 28 392 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

ENGINES, &c.—Description of Engines Direct acting, Trip expansion No. of Cylinders 3 No. of Cranks 3  
 Dia. of Cylinders 26-42-68 Length of Stroke 48 Revs. per minute 56 Dia. of Screw shaft as per rule 14.4 Material of Wm  
 as fitted 15.5 screw shaft  
 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 6-4  
 Dia. of Tunnel shaft as per rule 12.9 Dia. of Crank shaft journals as per rule 13.6 Dia. of Crank pin 14.5 Size of Crank webs 22.3 x 9.4 Dia. of thrust shaft under  
 as fitted 13.2 as fitted 14.4 collars 14.5 Dia. of screw 17-6 Pitch of Screw 17.5 No. of Blades 4 State whether moveable No Total surface 92 sq  
 No. of Feed pumps 2 Diameter of ditto 3.4 Stroke 34 Can one be overhauled while the other is at work Yes  
 No. of Bilge pumps 2 Diameter of ditto 4.3/4 Stroke 34 Can one be overhauled while the other is at work Yes  
 No. of Donkey Engines One Ballant Sizes of Pumps Ballant 9 x 10 Feed 4 x 8 No. and size of Suctions connected to both Bilge and Donkey pumps  
 In Engine Room Three 3.5 diam In Holds, &c. 2 of 3.5 to each

No. of Bilge Injections One sizes 6.4 Connected to condenser, or to circulating pump C.P. 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 —  
 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 11.6.07 of Stern Tube 11.6.07 Screw shaft and Propeller 24.6.07  
 Is the Screw Shaft Tunnel watertight Yes 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 6650 sq Is Forced Draft fitted No No. and Description of Boilers Two Cylindrical Tubular  
 Working Pressure 180 lb Tested by hydraulic pressure to 360 lb Date of test 28-5-07 No. of Certificate 3930  
 Can each boiler be worked separately Yes Area of fire grate in each boiler 7.12 sq No. and Description of Safety Valves to  
 each boiler Two Spring Area of each valve 8.29 sq 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 20 Dia. of boilers 17-6 Length 11-6 Material of shell plates Steel  
 Thickness 2.5 Range of tensile strength 28/32 Are the shell plates welded or flanged No Descrip. of riveting: cir. seams 2 D Riv  
 long. seams 2 Butt Straps Diameter of rivet holes in long. seams 1.5 Pitch of rivets Butt 1.5 Lap of plates or width of butt straps 1-9.7/8  
 Per centages of strength of longitudinal joint rivets 89.5 Working pressure of shell by rules 183.9 lb Size of manhole in shell 17 x 13  
 plate 8.5 Size of compensating ring 31 x 27 x 1.5 No. and Description of Furnaces in each boiler 4 Suspension Material Steel Outside diameter 3-2  
 Length of plain part top 7-0 bottom 6-10.5 Thickness of plates crown 1.2 Description of longitudinal joint Welded No. of strengthening rings —  
 Working pressure of furnace by the rules 198 lb Combustion chamber plates: Material Steel Thickness: Sides 5.8 1/32 Back 5.8 1/32 Top 5.8 1/32 Bottom 3.4  
 Pitch of stays to ditto: Sides 9.3 x 8.5 Back 9.3 x 8.5 Top 9.3 x 8.5 If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 183.4 lb  
 Material of stays Steel Diameter at smallest part 1.9 1/16 Area supported by each stay 80.6 sq Working pressure by rules 213 lb End plates in steam space:  
 Material Steel Thickness 1.7 1/16 Pitch of stays 24 x 23 How are stays secured Welded Working pressure by rules 185 lb Material of stays Steel  
 Diameter at smallest part 3.5 Area supported by each stay 552 sq Working pressure by rules 186.9 lb Material of Front plates at bottom Steel  
 Thickness 1.1/32 Material of Lower back plate Steel Thickness 1.3/32 Greatest pitch of stays 9.4 x 8.13 Working pressure of plate by rules 184 lb  
 Diameter of tubes 3.3/4 Pitch of tubes 5 x 5.8 Material of tube plates Steel Thickness: Front 1.1/32 Back 1.3/16 1/32 Mean pitch of stays 11.5  
 Pitch across wide water spaces 14.3/4 Working pressures by rules 187 lb Girders to Chamber tops: Material Steel Depth and  
 thickness of girder at centre 8.5 x 2 Length as per rule 33 Distance apart 9.3/4 Number and pitch of stays in each Three 8.8  
 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 \_\_\_\_\_ 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

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 Safe  
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  
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:— Set of top and bottom end connecting rod bolts and nuts Two main bearing bolts Set of coupling bolts Set of feed & bilge pump valves. 4 x 1/2" piston rings 2 piston springs Propeller & propeller shaft Bolts & nuts assorted 4 x 4

The foregoing is a correct description,  
FOR BLAIR & CO. LIMITED.  
Geo. Kettlewhip Manufacturer.

Dates of Survey while building During progress of work in shops - - - - - 1907 Feb 25. Mar 11. 18. 21. 26. Apr 2. 11. 19. 20 May 2. 3. 6. 9. 14. 24. 27. 28. 30  
During erection on board vessel - - - - - June 2. 5. 11. 14. 24. 25. 26. 28. July 2. 3. - Sld - June 11. 13. 19.  
Total No. of visits 31. Is the approved plan of main boiler forwarded herewith No. 70.

Dates of Examination of principal parts—Cylinders 21-3-07 Slides 14-4-07 Covers 28-3-07 Pistons 28-3-07 Rods 28-3-07  
Connecting rods 28-3-07 Crank shaft 3-6-07 Thrust shaft 24-5-07 Tunnel shafts 28-5-07 Screw shaft 11-6-07 Propeller 17-5-07  
Stern tube 2-5-07 Steam pipes tested 27-28-6-07 Engine and boiler seatings 11-6-07 Engines holding down bolts 26-6-07  
Completion of pumping arrangements 3-7-07 Boilers fixed 26-6-07 Engines tried under steam 3-7-07  
Main boiler safety valves adjusted 3-7-07 Thickness of adjusting washers 575. 54 1/2 x 1 1/2 175. 54 1/2 x 1 1/2  
Material of Crank shaft J. Steel Identification Mark on Do. 6240 Material of Thrust shaft J. Steel Identification Mark on Do. 6222  
Material of Tunnel shafts J. Steel Identification Marks on Do. 6229 Material of Screw shafts J. Steel Identification Marks on Do. 6245  
Material of Steam Pipes Copper solid drawn 6227 Test pressure 400 lbs per sq in 6246

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 & efficient, and when tested under steam were found satisfactory. In our opinion the machinery is eligible for the notation **J.M.C. 7.07** in the Register Book.

It is submitted that this vessel is eligible for THE RECORD **J.M.C. 7.07**  
Elec Light  
HC 23-7-07

The amount of Entry Fee.. £ 3 : 0 : 0 When applied for, 22-7-1907  
Special .. .. £ 29 : 12 : 0 When received, 24-7-1907  
Donkey Boiler Fee .. .. £ : :  
Travelling Expenses (if any) £ : :  
FRI. JUL 26 1907

Committee's Minute

Assigned

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