

# REPORT ON MACHINERY.

No. 6983.

Port of MIDDLESBROUGH-ON-TEES

Received at London Office THU. AUG. 31. 1911

No. in Survey held at Stockton-on-Tees Date, first Survey 22<sup>nd</sup> May Last Survey 19<sup>th</sup> Dec. 1911

Reg. Book. on the Steel Screw Steamer "Eskwood" (S.S. No. 189) (Number of Visits 40)

Master J. Barlow Built at Middlesbrough By whom built W. Horsell & Sons Lim. Tons { Gross 490.62 Net 370.11 When built 1911

Engines made at Stockton By whom made Messrs Blair & Co Lim. (No. 1721) when made 1911

Boilers made at Stockton By whom made Messrs Blair & Co Lim. when made 1911

Registered Horse Power \_\_\_\_\_ Owners Messrs J. Barlow & Co (K. R. Boulton & Co & J. W. Drake) Port belonging to Middlesbrough

Nom. Horse Power as per Section 28 131 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted no

**ENGINES, &c.**—Description of Engines Tri-compound No. of Cylinders 3 No. of Cranks 3

Dia. of Cylinders 16-27-44 Length of Stroke 30 Revs. per minute 86 Dia. of Screw shaft 9.06 as per rule 9.74 as fitted 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 in 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 fits tightly If two liners are fitted, is the shaft lapped or protected between the liners yes Length of stern bush 3'-4"

Dia. of Tunnel shaft 8.1 as per rule 8.5 as fitted Dia. of Crank shaft journals 8.5 as per rule 8.74 as fitted Dia. of Crank pin 9 Size of Crank webs 17 1/2 x 6 Dia. of thrust shaft under collars 8 3/4 Dia. of screw 11'-0" Pitch of Screw 14'-0" No. of Blades 4 State whether moveable no Total surface 52 sq

No. of Feed pumps 2 Diameter of ditto 2 1/2 Stroke 22 Can one be overhauled while the other is at work yes

No. of Bilge pumps 2 Diameter of ditto 3 1/2 Stroke 22 Can one be overhauled while the other is at work yes

No. of Donkey Engines 2 Sizes of Pumps Ballant - 9 x 10 Ind - 3 1/2 x 5 dph No. and size of Suctions connected to both Bilge and Donkey pumps In Engine Room 2 @ 2 1/2" In Holds, &c. 2 @ 2"

No. of Bilge Injections 1 sizes 4 Connected to condenser, or to circulating pump yes 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 hold suction 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 13.7.11 of Stern Tube 17.7.11 Screw shaft and Propeller 3.8.11

Is the Screw Shaft Tunnel watertight none Is it fitted with a watertight door — worked from —

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

Total Heating Surface of Boilers 2262 Is Forced Draft fitted no No. and Description of Boilers One single ended

Working Pressure 180 Tested by hydraulic pressure to 360 Date of test 31.7.11 No. of Certificate 4706

Can each boiler be worked separately yes Area of fire grate in each boiler 60 sq No. and Description of Safety Valves to each boiler 2 direct spring Area of each valve 7.07 Pressure to which they are adjusted 185 Are they fitted with easing gear yes

Smallest distance between boilers or uptakes and bunkers or woodwork 7 ft Mean dia. of boilers 15'-6" Length 10'-6" Material of shell plates steel

Thickness 1 1/4 Range of tensile strength 28-32 Are the shell plates welded or flanged no Descrip. of riveting: cir. seams 2 Riv lap long. seams 2B-3 Riv Diameter of rivet holes in long. seams 15/16 Pitch of rivets 9" Lap of plates or width of butt straps 19 3/8 x 1 3/32

Per centages of strength of longitudinal joint rivets 89.0 plate 85.4 Working pressure of shell by rules 184 1/2 Size of manhole in shell 16" x 12"

Size of compensating ring 7 3/4 x 1 1/4 No. and Description of Furnaces in each boiler 3 plain Material steel Outside diameter 43.78

Length of plain part top 67" bottom 97 1/2 Thickness of plates crown 49/64 bottom 256/64 Description of longitudinal joint Welded No. of strengthening rings none

Working pressure of furnace by the rules 182 Combustion chamber plates: Material steel Thickness: Sides 1/2 Back 1/2 Top 1/2 Bottom 1 1/2

Pitch of stays to ditto: Sides 9 1/2 x 9 1/2 Back 9 1/2 x 9 1/2 Top 9 1/2 x 9 If stays are fitted with nuts or riveted heads nuts Working pressure by rules 181

Material of stays steel Diameter at smallest part 1.59 Area supported by each stay 90.25 Working pressure by rules 198 End plates in steam space: Material steel Thickness 1 1/4 Pitch of stays 20 21 17 How are stays secured nuts Working pressure by rules 185 Material of stays steel

Diameter at smallest part 3.04 Area supported by each stay 389.5 Working pressure by rules 193 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 14 1/2 17 1/2 9 1/2 Working pressure of plate by rules 213

Diameter of tubes 3 1/2 Pitch of tubes 4 1/2 x 4 1/2 Material of tube plates steel Thickness: Front 1 1/2 Back 1 3/16 Mean pitch of stays 11"

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 7 1/2 x 1 1/2 Length as per rule 26 1/2 Distance apart 9 3/4 Number and pitch of stays in each 2 @ 9"

Working pressure by rules 185 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 See Middlesbrough Report No. 6929*

No. *one* Description *Vertical*  
 Made at *Middlesbrough* By whom made *Thos. D. Ridley & Sons* When made *1911* Where fixed *Stokehold*  
 Working pressure *100* tested by hydraulic pressure to *200* Date of test *18.7.11* No. of Certificate *4692* Fire grate area *21* Description of Safety Valves *direct spring* No. of Safety Valves *one* Area of each *11.04* Pressure to which they are adjusted \_\_\_\_\_ Date of adjustment \_\_\_\_\_  
 If fitted with easing gear *yes* 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: *Two top & two bottom-end connecting rod bolts & nuts. Two main bearing bolts & nuts. One set of coupling bolts & nuts. One set of feed & bilge pump valves. Assorted bolts & nuts etc.*

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

Dates of Survey while building  
 During progress of work in shops - - SECRETARY. 1911. *May 22, 24, 26, 27, 29, 30, 31 June 3, 8, 13, 15, 16, 19, 26, 28, 30 July 1, 3, 5, 6, 7, 8, 11, 12*  
 During erection on board vessel - - *14, 17, 18, 20, 21, 24, 26, 27, 31 Aug. 3, 5, 8, 9, 17, 19.*  
 Total No. of visits *40* Is the approved plan of main boiler forwarded here *with plan 6929*

Dates of Examination of principal parts—Cylinders *13.6.11* Slides *16.6.11* Covers *30.6.11* Pistons *5.7.11* Rods *16.6.11*  
 Connecting rods *28.6.11* Crank shaft *5.7.11* Thrust shaft *13.6.11* Tunnel shafts \_\_\_\_\_ Screw shaft *14.7.11* Propeller *13.7.11*  
 Stern tube *13.7.11* Steam pipes tested *5.8.11* Engine and boiler seatings *13.7.11* Engines holding down bolts *8.8.11*  
 Completion of pumping arrangements *9.8.11* Boilers fixed *8.8.11* Engines tried under steam *9.8.11*  
 Main boiler safety valves adjusted *9.8.11* Thickness of adjusting washers *P. Val = 5/16 : S. V 5/16*  
 Material of Crank shaft *Iron Steel* Identification Mark on Do. *6672* Material of Thrust shaft *Iron Steel* Identification Mark on Do. *8116*  
 Material of Tunnel shafts \_\_\_\_\_ Identification Marks on Do. \_\_\_\_\_ Material of Screw shafts *iron* Identification Marks on Do. *6672*  
 Material of Steam Pipes *solid drawn copper (4 1/2 x 1/4)* Test pressure *400 lb.*

General Remarks (State quality of workmanship, opinions as to class, &c.)  
*The machinery of this vessel has been constructed under Special Survey, is of good material and workmanship and has been fitted and secured on board in accordance with the Rules. It is now in good working condition and in our opinion eligible to have the notation of + L.M.C. 8. 11. in the Register Book.*

It is submitted that this vessel is eligible for THE RECORD. + L.M.C. 8 - 11

*FRSE*  
*31-8-11*

*Wm Morrison & Sons*  
 Engineer Surveyors to Lloyd's Register of British & Foreign Shipping.

*Rule N.H.P. = 191*

The amount of Entry Fee..	£ 2 : 0 :	When applied for,
Special .. .. .	£ 19 : 13 :	<i>25.8.11</i>
Donkey Boiler Fee .. .. .	£ : :	When received,
Travelling Expenses (if any) £	: :	<i>1.9.11</i>

Committee's Minute *FRI. SEP. 1 - 1911*  
 Assigned *Thmc 8. 11*



Certificate (if required) to be sent to the Secretary of the Committee's Minutes.