

REPORT ON MACHINERY.

No. 5383

MON. 24 FEB 1908

Port of MIDDLESBROUGH-ON-TEES

Received at London Office

19

No. in Survey held at Stockton & Middlesbrough Date, first Survey Oct 31st 1907 Last Survey Feb 20th 1908

Reg. Book 40 on the Steel S.S. "Dare Castle"

(Number of Visits 55)

Tons { Gross 4261.46
Net 2665.12

Master B.V. Smith Built at Middlesbrough By whom built B. Crags & Sons Ltd

When built 1908

Engines made at Stockton By whom made Polain & Co Ltd

when made 1908

Boilers made at Stockton By whom made Polain & Co Ltd

when made 1908

Registered Horse Power _____ Owners J. Chambers & Co

Port belonging to Liverpool

Nom. Horse Power as per Section 28 459 Is Refrigerating Machinery fitted for cargo purposes No

Is Electric Light fitted Yes

ENGINES, &c.—Description of Engines Direct acting Triple expansion No. of Cylinders 3 No. of Cranks 3

Dia. of Cylinders 26 1/2 - 44 - 72 Length of Stroke 48 Revs. per minute 56 Dia. of Screw shaft as per rule 14 1/2 Material of screw shaft W.S.

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 5-6

Dia. of Tunnel shaft as per rule 13 1/2 Dia. of Crank shaft journals as per rule 13 8/16 Dia. of Crank pin 15 Size of Crank webs 24 1/2 x 4 1/2 Dia. of thrust shaft under

collars 15 Dia. of screw 18-0 Pitch of Screw 10-6 No. of Blades 4 State whether moveable Yes Total surface 94 sq ft

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 Polin's

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 Two Sizes of Pumps Feed 4 1/2 x 10 Ball 9 x 10 No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room Three 3 1/2 diam In Holds, &c. Two each hold 3 1/2 diam

No. of Bilge Injections 1 sizes 6 3/4 Connected to condenser, or to circulating pump L.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 —

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 to fore hold How are they protected Wood casing

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 19-12-07 of Stern Tube 16-12-07 Screw shaft and Propeller 28-1-08

Is the Screw Shaft Tunnel watertight see ship's report 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 6419 sq ft Is Forced Draft fitted Yes No. and Description of Boilers Two cylindrical tubular

Working Pressure 180 lbs Tested by hydraulic pressure to 360 lbs Date of test 7-1-08 No. of Certificate 4076

Can each boiler be worked separately Yes Area of fire grate in each boiler 66 sq ft No. and Description of Safety Valves to

each boiler Two spring Area of each valve 15.9 sq in 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 See dia. of boilers 16-7 1/2 Length 12-0 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 LD Riv.

long. seams 2 Butt & Lap Diameter of rivet holes in long. seams 1 1/2 Pitch of rivets One row 9 7/8 Lap of plates or width of butt straps 1-9 3/4

Per centages of strength of longitudinal joint rivets 88.7 Working pressure of shell by rules 207 lbs Size of manhole in shell 17 x 13

Size of compensating ring 31 x 27 x 1 1/2 No. and Description of Furnaces in each boiler 3 Morrison's Material Steel Outside diameter 4-4

Length of plain part top 7-5 1/2 bottom 7-4 Thickness of plates crown 11/16 Description of longitudinal joint Welded No. of strengthening rings —

Working pressure of furnace by the rules 217 lbs Combustion chamber plates: Material Steel Thickness: Sides 5/8 Back 5/8 Top 5/8 Bottom 15/16

Pitch of stays to ditto: Sides 7 7/8 x 7 7/8 Back 7 7/8 x 7 7/8 Top 7 7/8 x 7 7/8 If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 217 lbs

Material of stays Steel Diameter at smallest part 1 7/16 Area supported by each stay 62 sq in Working pressure by rules 209 lbs End plates in steam space:

Material Steel Thickness 1 3/8 Pitch of stays 22 1/2 x 19 3/4 How are stays secured 22 x 10 Working pressure by rules 199 lbs Material of stays Steel

Diameter at smallest part 3 1/2 Area supported by each stay 444.3 sq in Working pressure by rules 225 lbs Material of Front plates at bottom Steel

Thickness 1 1/2 Material of Lower back plate Steel Thickness 1 1/8 Greatest pitch of stays 17 3/4 x 7 7/8 Working pressure of plate by rules 235 lbs

Diameter of tubes 2 1/2 Pitch of tubes 3 3/4 x 3 3/4 Material of tube plates Steel Thickness: Front 1 1/2 Back 1 3/16 Mean pitch of stays 9 7/8

Pitch across wide water spaces 12 1/2 Working pressures by rules 261 lbs Girders to Chamber tops: Material Steel Depth and

thickness of girder at centre 8 x 2 Length as per rule 33 1/2 Distance apart 7 7/8 Number and pitch of stays in each Three 7 7/8

Working pressure by rules 201 lbs 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 _____

Lloyd's Register Foundation

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 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:— Top and bottom end connecting rod bolts & nuts. Set of coupling bolts. Two main bearing bolts. Set of feed and bilge pump valves. Main and donkey feed check valves. N & M piston rings & piston pins. Propeller shaft. 2 spare propeller blades. Bolts & nuts.

The foregoing is a correct description,
FOR BLAIR & CO., LIMITED.
 Geo. A. Wilson Manufacturer of main engines & boilers.

ASSISTANT SECRETARY. 1904 Oct. 31. Nov. 2. 26. 28. Dec. 4. 6. 11. 16. 17. 18. 19. 20. 24. 30. 1908 Jan. 6. 7. 14. 17.

Dates of Survey while building: During progress of work in shops - - - During erection on board vessel - - - Total No. of visits 35

Is the approved plan of main boiler forwarded herewith No Yes

Is the approved plan of donkey boiler forwarded herewith No Yes

Dates of Examination of principal parts—Cylinders 28-11-07 Slides 20-12-07 Covers 11-12-07 Pistons 18-12-07 Rods 17-12-07

Connecting rods 11-12-07 Crank shaft 20-1-08 Thrust shaft 20-12-07 Tunnel shafts 11-12-07 Screw shaft 17-1-08 Propeller 24-1-08

Stern tube 4-12-07 Steam pipes tested 3-2-08 Engine and boiler seatings 15-12-07 Engines holding down bolts 18-2-08

Completion of pumping arrangements 11-2-08 Boilers fixed 10-2-08 Engines tried under steam 11-2-08

Main boiler safety valves adjusted 11-2-08 Thickness of adjusting washers 5 1/2 x 3/8 or 7/32 1 3/4 x 5/16 or 1 1/4 x 3/2

Material of Crank shaft Steel Identification Mark on Do. 6404 Material of Thrust shaft Steel Identification Mark on Do. 6377

Material of Tunnel shafts Steel Identification Marks on Do. 6372 Material of Screw shafts W. 9 Identification Marks on Do. 6402

Material of Steam Pipes Copper solid drawn Test pressure 400 lb. 8" span shafts 6403

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

The machinery and boilers of this vessel have been constructed under special survey, the materials and workmanship are good and efficient, and when tested under steam were found satisfactory, and in my opinion now eligible for the notation L.M.C. 2-08 in the Register Book.

It is submitted that this vessel is eligible for THE RECORD. L.M.C. 2-08.
 ELEC. LIGHT. F.H.

24-2-08
 G.A.W.

The amount of Entry Fee..	£ 3	When applied for,	
Special	£ 42	19	22-2-1908
Donkey Boiler Fee	£		
Travelling Expenses (if any)	£		
		When received,	27-2-1908

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

Committee's Minute
 Assigned
 TUES. 25 FEB 1908
 + L.M.C. 2-08
 F.D. Elec. Light.



Certificate (if required) to be sent to the Registrar of Shipping (The Surveyors are requested not to write on or below the space for Committee's Minute.)