

REPORT ON MACHINERY.

Mdb No. 4153
Hul. 17345

Port of MIDDLESBROUGH-ON-TEES.

Received at London Office JUL 12 DEC 1905

No. in Survey held at Stockton Date, first Survey April 18th 1905 Last Survey June 2nd 1905
Reg. Book. 24 on the 1/2 "Thames" (Number of Visits 8) Not 4th 310
Master Gool Built at Gool By whom built Gool & B & R Co Tons 99
Engines made at Gr Yarmouth By whom made Grathie & Co when made 1905
Boilers made at Stockton By whom made Tolain & Co when made 1905
Registered Horse Power 67 Owners E. P. Hutchinson Port belonging to Hull
Nom. Horse Power as per Section 28 67 Is Refrigerating Machinery fitted for cargo purposes ✓ Is Electric Light fitted ✓

ENGINES, &c.—Description of Engines

No. of Cylinders 2 No. of Cranks 2
Dia. of Cylinders 10 1/2 Length of Stroke 18 Revs. per minute 150 Dia. of Screw shaft 1 1/2 as per rule 1 1/2 Material of screw shaft Steel
Is the screw shaft fitted with a continuous liner the whole length of the stern tube ✓ Is the after end of the liner made water tight in the propeller boss ✓ 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 ✓ If two liners are fitted, is the shaft lapped or protected between the liners ✓ Length of stern bush 18
Dia. of Tunnel shaft 1 1/2 as per rule 1 1/2 Dia. of Crank shaft journals 1 1/2 as per rule 1 1/2 Dia. of Crank pin 1 1/2 Size of Crank webs 1 1/2 Dia. of thrust shaft under collars 1 1/2 Dia. of screw 1 1/2 Pitch of screw 1 1/2 No. of blades 1 1/2 State whether moveable 1 1/2 Total surface 1 1/2
No. of Feed pumps 1 Diameter of ditto 1 1/2 Stroke 1 1/2 Can one be overhauled while the other is at work ✓
No. of Bilge pumps 1 Diameter of ditto 1 1/2 Stroke 1 1/2 Can one be overhauled while the other is at work ✓
No. of Donkey Engines 1 Sizes of Pumps 1 1/2 No. and size of Suctions connected to both Bilge and Donkey pumps 1 1/2
In Engine Room 1 1/2 In Holds, &c. 1 1/2

No. of bilge injections 1 sizes 1 1/2 Connected to condenser, or to circulating pump 1 1/2 Is a separate donkey suction fitted in Engine room & size 1 1/2
Are all the bilge suction pipes fitted with roses ✓ Are the roses in Engine room always accessible ✓ Are the sluices on Engine room bulkheads always accessible ✓
Are all connections with the sea direct on the skin of the ship ✓ Are they Valves or Cocks ✓
Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates ✓ Are the discharge pipes above or below the deep water line ✓
Are they each fitted with a discharge valve always accessible on the plating of the vessel ✓ Are the blow off cocks fitted with a spigot and brass covering plate ✓
What pipes are carried through the bunkers 1 1/2 How are they protected 1 1/2
Are all pipes, cocks, valves, and pumps in connection with the machinery and all boiler mountings accessible at all times ✓
Are the bilge suction pipes, cocks, and valves arranged so as to prevent any communication between the sea and the bilges ✓
When were stern tube, propeller, screw shaft, and all connections examined in dry dock 1 1/2 Is the screw shaft tunnel watertight ✓
Is it fitted with a watertight door 1 1/2 worked from 1 1/2

BOILERS, &c.—

(Letter for record S) Total Heating Surface of Boilers 1279 Is forced draft fitted No

No. and Description of Boilers One Cyl Multitubular Working Pressure 130 lbs Tested by hydraulic pressure to 260 lbs
Date of test 2-6-05 Can each boiler be worked separately ✓ Area of fire grate in each boiler 35 3/4 No. and Description of safety valves to each boiler Two direct spring Area of each valve 8-29 Pressure to which they are adjusted 135 lbs Are they fitted with easing gear yes
Smallest distance between boilers or uptakes and bunkers or woodwork 7' 0" Dia. of boilers 12-0 Length 10-3 1/2 Material of shell plates Steel
Thickness 3 1/2 Range of tensile strength 27/32 Are they welded or flanged No Descrip. of riveting: cir. seams 2 D 7 in long. seams 2 Butt shape
Diameter of rivet holes in long. seams 15/16 Pitch of rivets One row 7 1/4 Two 3 5/8 Lap of plates or width of butt straps 1-3
Per centages of strength of longitudinal joint 90.6 Working pressure of shell by rules 133.2 lbs Size of manhole in shell 17 x 13
Size of compensating ring 2 1/2 x 2 1/2 x 3 1/2 No. and Description of Furnaces in each boiler Two plain Material Steel Outside diameter 3-4 1/4
Length of plain part 6-1 1/2 Thickness of plates 5/8 Description of longitudinal joint Butt shape No. of strengthening rings 1
Working pressure of furnace by the rules 141 lbs Combustion chamber plates: Material Steel Thickness: Sides 5/8 Back 5/8 Top 5/8 Bottom 3/4
Pitch of stays to ditto: Sides 9 1/2 x 9 3/4 Back 9 1/2 x 9 1/4 Top 9 1/2 x 9 If stays are fitted with nuts or riveted heads No Working pressure by rules 142 lbs
Material of stays Steel Diameter at smallest part 1 7/16 Area supported by each stay 95 Working pressure by rules 136 lbs End plates in steam space: Steel Thickness 15/16 Pitch of stays 10 3/4 x 16 1/2 How are stays secured 2 x 10 Working pressure by rules 131.4 lbs Material of stays Steel
Diameter at smallest part 2 3/8 Area supported by each stay 509.3 Working pressure by rules 143 lbs Material of Front plates at bottom Steel
Thickness 7/8 Material of Lower back plate Steel Thickness 7/8 Greatest pitch of stays 14 Working pressure of plate by rules 141 lbs
Diameter of tubes 3 1/4 Pitch of tubes 4 7/8 x 4 7/8 Material of tube plates Steel Thickness: Front 7/8 Back 1 1/16 Mean pitch of stays 11 9/16
Pitch across wide water spaces 14 1/4 Working pressures by rules 144 lbs Girders to Chamber tops: Material Steel Depth and thickness of girder at centre 7 3/4 x 1 3/4 Length as per rule 2-9 1/2 Distance apart 9 1/2 Number and pitch of Stays in each Three 9
Working pressure by rules 133.4 lbs Superheater or Steam chest; how connected to boiler None Can the superheater be shut off and the boiler worked separately ✓ Diameter 1 1/2 Length 1 1/2 Thickness of shell plates 1 1/2 Material Steel Description of longitudinal joint 1 1/2 Diam. of rivet holes 1 1/2 Pitch of rivets 1 1/2 Working pressure of shell by rules 1 1/2 Diameter of flue 1 1/2 Material of flue plates 1 1/2 Thickness 1 1/2
If stiffened with rings 1 1/2 Distance between rings 1 1/2 Working pressure by rules 1 1/2 End plates: Thickness 1 1/2 How stayed 1 1/2
Working pressure of end plates 1 1/2 Area of safety valves to superheater 1 1/2 Are they fitted with easing gear 1 1/2

DONKEY BOILER— No. Description
Made at By whom made When made Where fixed
Working pressure tested by hydraulic pressure to No. of Certificate Fire grate area Description of safety valves
No. of safety valves Area of each Pressure to which they are adjusted 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 Thickness of shell crown plates Radius of do. No. of Stays to do.
Plates
Dia. of stays. Diameter of furnace Top Bottom Length of furnace Thickness of furnace plates Description of joint
Thickness of furnace crown plates Stayed by Working pressure of shell by rules
Working pressure of furnace by rules Diameter of uptake Thickness of uptake plates Thickness of water tubes

SPARE GEAR. State the articles supplied :—

The foregoing is a correct description,
FOR BLAIR & Co., LIMITED.

Manufacturer of main boiler.

C. H. Blair

MANAGING DIRECTOR.

Dates of Survey while building { During progress of work in shops - - 1905 April 1828. May 2. 4. 15. 22. 29. June 2
During erection on board vessel - -
Total No. of visits Eight

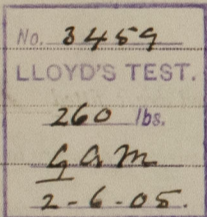
Is the approved plan of main boiler forwarded herewith No. Blair

" " " donkey " " "

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

The main boiler for this vessel has been constructed under special order, the materials and workmanship are good and efficient & when tested with hydraulic pressure was found tight and satisfactory. It is to be sent away to be fitted on board the vessel building at Guelph.
The boiler has been stamped as below.

Geo. A. Milner



This Boiler has now been fitted and secured on board in accordance with the Rules.

The amount of Entry Fee. £ : : When applied for,
Special £ : : 16. 6. 1905
Donkey Boiler Fee £ 3 : 2 : 0
Travelling Expenses (if any) £ : : When received, 30. 6. 1905

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

Committee's Minute

FRI. 15 DEC 1905

Assigned



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Foundation