

REPORT ON MACHINERY.

No. 8477

Received at London Office MON. DEC. 28. 1914

Date of writing Report 19 When handed in at Local Office Dec 24. 1914 Port of MIDDLESBRO'

No. in Survey held at Stockholm Date, First Survey August 11th Last Survey December 10th 1914
Reg. Book. on the STEEL SCREW STEAMER "AMPLEFORTH" (Number of Visits 40.)

Master Built at Stockholm By whom built Messrs Richardson & Co. Ltd. No 643
Engines made at Stockholm By whom made Messrs Blair & Co. Ltd. (No 811) when made 1914
Boilers made at Stockholm By whom made Messrs Blair & Co. Ltd. when made 1914
Registered Horse Power Owners The Ampleforth Steam Ship Co. Ltd. Port belonging to
Nom. Horse Power as per Section 28 342 Is Refrigerating Machinery fitted for cargo purposes No. Is Electric Light fitted No.

ENGINES, &c.—Description of Engines Triple Expansion No. of Cylinders 3 No. of Cranks 3
Dia. of Cylinders 26-41-64 Length of Stroke 45 Revs. per minute 54 Dia. of Screw shaft as per rule 13.03 Material of screw shaft as fitted 15 1/16 Dia. of Thrust shaft under
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
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 Length of stern bush 5-3
Dia. of Tunnel shaft as per rule 12.4 Dia. of Crank shaft journals as per rule 13.02 Dia. of Crank pin 14 Size of Crank webs 24-9 Dia. of thrust shaft under
collars 14 Dia. of screw 14-0 Pitch of Screw 14-6 No. of Blades 4 State whether moveable No Total surface 924
No. of Feed pumps 2 Diameter of ditto 3 1/4 Stroke 33 Can one be overhauled while the other is at work Yes
No. of Bilge pumps 2 Diameter of ditto 4 3/4 Stroke 33 Can one be overhauled while the other is at work Yes
No. of Donkey Engines 3 Sizes of Pumps 10-10, 4-1/2-8, 6-4 No. and size of Suctions connected to both Bilge and Donkey pumps
In Engine Room 3 @ 3 1/2 In Holds, &c. 2 to each hold 3 1/2
1 to Tunnel Well 2 1/2
No. of Bilge Injections 1 sizes 6 1/2 Connected to condenser, or to circulating pump top pump Is a separate Donkey Suction fitted in Engine room & size Yes 3 1/2
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 No
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 Suction to fore holds 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 8-10-14 of Stern Tube 8-10-14 Screw shaft and Propeller 24-11-14
Is the Screw Shaft Tunnel watertight Yes Is it fitted with a watertight door Yes worked from top platform
OILERS, &c.—(Letter for record 5.) Manufacturers of Steel John Spencer & Sons

Total Heating Surface of Boilers 5494 Is Forced Draft fitted No. and Description of Boilers two Cyl. S.S.
Working Pressure 180 lbs Tested by hydraulic pressure to 360 lbs Date of test 23-11-14 No. of Certificate 5424
Can each boiler be worked separately Yes Area of fire grate in each boiler 63.37 No. and Description of Safety Valves to
each boiler 2 direct-Spring loaded Area of each valve 8.29 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 2-0 Ext. dia. of boilers 16-6 Length 11-0 Material of shell plates Steel
Thickness 1/2 Range of tensile strength 29 1/4-33 Are the shell plates welded or flanged No Descrip. of riveting: cir. seams 2 R. Laps
Long. seams 2 B. 2 R Diameter of rivet holes in long. seams 1 1/16 Pitch of rivets 8 1/8 Lap of plates or width of butt straps 10 3/8 x 1 1/2
Percentage of strength of longitudinal joint rivets 90.4 plate 85.2 Working pressure of shell by rules 183 lbs Size of manhole in shell 16-12
Size of compensating ring 4 3/4 x 1 1/2 No. and Description of Furnaces in each boiler 3 DEIGHTONS Material Steel Outside diameter 48 1/2
Length of plain part top bottom Thickness of plates crown 3/16 bottom 1/16 Description of longitudinal joint weld No. of strengthening rings 9
Working pressure of furnace by the rules 189 lbs Combustion chamber plates: Material Steel Thickness: Sides 2 3/32 Back 1 1/16 Top 2 3/32 Bottom 1 1/8
Pitch of stays to ditto: Sides 9 1/8 x 10 1/2 Back 9 1/2 x 9 1/2 Top 10 1/2 x 9 1/2 If stays are fitted with nuts or riveted heads No Working pressure by rules 200 lbs End plates in steam space:
Material of stays Steel Diameter at smallest part 1.00 Area supported by each stay 98.4 Working pressure by rules 194 lbs Material of stays Steel
Material Steel Thickness 1 3/8 Pitch of stays 2 1/2 x 1 1/2 How are stays secured Tied (9 x 1) Working pressure by rules 195 lbs Material of Front plates at bottom Steel
Diameter at smallest part 8.5 Area supported by each stay 45.7 Working pressure by rules 195 lbs Working pressure of plate by rules 225 lbs
Thickness 1 Material of Lower back plate Steel Thickness 1 1/2 Greatest pitch of stays 16 x 9 1/2 Mean pitch of stays 9 5/8
Diameter of tubes 3 1/2 Pitch of tubes 4 3/4 x 4 1/8 Material of tube plates Steel Thickness: Front 1 1/16 Back 1 3/16
Pitch across wide water spaces 14 1/2 Working pressures by rules 192 lbs Girders to Chamber tops: Material Steel Depth and
Thickness of girder at centre 4 3/4 x 1 1/8 Length as per rule 30 Distance apart 10 1/2 Number and pitch of stays in each 2 @ 9 1/2
Working pressure by rules 184 lbs 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
plates Pitch of rivets Working pressure of shell by rules Diameter of flue Material of flue plates Thickness
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

W 981-0078

DONKEY BOILER

Manufacturers of Steel

See Report to

| | | | | | |
|--------------------------------------|--|---------------------------|-------------------------------------|----------------------------------|-----------------------|
| 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:— Two each of con-rod top end and bottom end bolts and nuts 2 main bearing bolts and nuts, one set of coupling bolts and nuts, one set of feed and bridge pump valves, one set each of H.P. & L.P. Ramsbottom rings pistons one propeller and one tail end shaft, assorted iron and bolts and nuts.

The foregoing is a correct description,

FOR BLAIR & CO., LIMITED.

See Nottingham

Manufacturer.

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|--------------------------------|----------------------------------|--|
| Dates of Survey while building | During progress of work in shops | 1914 Aug 11 Sep 10-11-15-16-17-18-21-22-24-30 Oct 1-3-4-8-9-12-14-15-17-19-26-27-28-30 Nov 2-3-4-6-9-11-13-18-23-24-28 |
| | During erection on board vessel | 30 Dec 3-8-10 |
| | Total No. of visits | 40 |

Is the approved plan of main boiler forwarded herewith

Yes

Yes

| | | | | | | | | | |
|---|-----------|----------------------------|-----------|-----------------------------|-----------|------------------------------------|--------------------|--------------------------------|--------------------------------|
| Dates of Examination of principal parts—Cylinders | 4-10-14 | Slides | 2-11-14 | Covers | 10-10-14 | Pistons | 12-10-14 | Rods | 10-10-14 |
| Connecting rods | 12-10-14 | Crank shaft | 10-10-14 | Thrust shaft | 16-10-14 | Tunnel shafts | 18-10-14 | Screw shaft | 29-10-14 |
| Propeller | 2-11-14 | Stern tube | 3-10-14 | Steam pipes tested | 29-11-14 | Engine and boiler seatings | 1-11-14 | Engines holding down bolts | 24-11-14 |
| Completion of pumping arrangements | 3-12-14 | Boilers fixed | 30-11-14 | Engines tried under steam | 3-12-14 | Main boiler safety valves adjusted | 3-12-14 | Thickness of adjusting washers | 5s 5/16 5p 5/16 P 3/8 P 5/16 F |
| Material of Crank shaft | Eng Steel | Identification Mark on Do. | 6024 | Material of Thrust shaft | Eng Steel | Identification Mark on Do. | 442N | Material of Tunnel shafts | Eng Steel |
| Identification Marks on Do. | 442N | Material of Screw shafts | Eng Steel | Identification Marks on Do. | 442N | Material of Steam Pipes | Solid drawn Copper | Test pressure | 360 lb |

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

The Engines and Boilers of this vessel have been constructed under Special Survey and are of good material and workmanship. They have been fitted and secured on board in accordance with the Rules, are now in good working condition and eligible in my opinion to have the notation of σ_4 L.M.C. 12-14 in the Register Book.

It is submitted that this vessel is eligible for THE RECORD + L.M.C. 12.14.

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|------------------------------|------------|-------------------|----------|
| The amount of Entry Fee | £ 3 : 0 : | When applied for, | 23/12/14 |
| Special | £ 34 : 2 : | When received, | 24/12/14 |
| Donkey Boiler Fee | £ : | | |
| Travelling Expenses (if any) | £ : | | |

Committee's Minute THE REC 29.12.14
Assigned + L.M.C. 12.14

MACHINERY CERTIFICATE
WRITTEN.

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