

REPORT ON MACHINERY.

Port of Middlesbro'

Received at London Office

No. in Survey held at Stockton
Reg. Book.

Date, first Survey 16th July 1900 Last Survey 13th March 1901
(Number of Visits 46)

on the

S. S. Wooda.

Tons { Gross 3806.
Net 2461.

Master F. Mogg Built at Hornaby By whom built Richardson, Juck Co When built 1901.

Engines made at Stockton By whom made Blair & Co L^d when made 1901.

Boilers made at Stockton By whom made Blair & Co L^d when made 1901.

Registered Horse Power Owners The Wooda S. S. Co L^d Port belonging to Cardiff

Nom. Horse Power as per Section 28 349. Is Refrigerating Machinery fitted No Is Electric Light fitted No.

ENGINES, &c.—Description of Engines Triple Expansion No. of Cylinders Three No. of Cranks Three

Dia. of Cylinders 26, 42 1/2 & 69 1/2 Length of Stroke 45 Revs. per minute 58 Dia. of Screw shaft 12.8 as per rule 14 1/4 as fitted Lgth. of stern bush 51 1/2

Dia. of Tunnel shaft 11.6 as per rule 13 1/2 as fitted Dia. of Crank shaft journals 12.2 as per rule 13 3/4 as fitted Dia. of Crank pin 14 1/4 Size of Crank web 22 1/2 x 9 1/4 Dia. of thrust shaft under collars 14 1/4 Dia. of screw 17.0 Pitch of screw 16.6 No. of blades 4 State whether moveable So. Total surface 86 1/2 sq. ft

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 two Sizes of Pumps B. 9 x 10 F 4 x 8 No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room Three 3 1/2 diameter. In Holds, &c. Fore, Main, Aft and

Aftermost holds two in each 3 1/2 dia. Tunnel well 2 1/2 dia.

No. of bilge injections 1 sizes 6 1/4 Connected to condenser, or to circulating pump Yes 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 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 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

When were stern tube, propeller, screw shaft, and all connections examined in dry dock on stocks Is the screw shaft tunnel watertight See ship Rep^s

Is it fitted with a watertight door Yes worked from upper platform.

BOILERS, &c.— (Letter for record (S)) Total Heating Surface of Boilers 5620 sq. ft. Is forced draft fitted No

No. and Description of Boilers 2. S. E. Multitubular Working Pressure 160 lbs Tested by hydraulic pressure to 320 lbs

Date of test 13.2.01 Can each boiler be worked separately Yes Area of fire grate in each boiler 64 sq. ft. No. and Description of safety valves to each boiler 2 dir. act. Spring Area of each valve 8.29 Pressure to which they are adjusted 165 lbs. Are they fitted with easing gear Yes

Smallest distance between boilers or uptakes and bunkers or woodwork outside banking dia. of boilers 16.6 Length 11.0 Material of shell plates S.

Thickness 1 1/2 Range of tensile strength 27.32 Are they welded or flanged No Descrip. of riveting: cir. seams d. r. l. long. seams d. butt str

Diameter of rivet holes in long. seams 1 3/8 Pitch of rivets 9 1/2 x 4 5/8 Lap of plates or width of butt straps 6 5/8 & 20 1/8

Per centages of strength of longitudinal joint rivets 88.9 plate 85.1 Working pressure of shell by rules 177 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 S. Outside diameter 49

Length of plain part top 7.0 bottom 7.0 Thickness of plates top 9/16 bottom 9/16 Description of longitudinal joint welded No. of strengthening rings -

Working pressure of furnace by the rules 177 lbs Combustion chamber plates: Material S. Thickness: Sides 7/16 Back 7/16 Top 7/16 Bottom 1"

Pitch of stays to ditto: Side 9 3/4 x 7 3/4 Back 9 5/8 x 9 1/4 Top 9 1/2 x 7 3/4 If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 183 lbs

Material of stays S. Diameter at smallest part 1 9/16 Area supported by each stay 89 Working pressure by rules 194 lbs End plates in steam space:

Material S. Thickness 1 1/8 Pitch of stays 20 x 17 1/2 How are stays secured Nuts & washers Working pressure by rules 169 lbs Material of stays S.

Diameter at smallest part 2 3/4 Area supported by each stay 350 Working pressure by rules 169 lbs Material of Front plates at bottom S.

Thickness 1" Material of Lower back plate S. Thickness 1 1/16 Greatest pitch of stays 14" Working pressure of plate by rules 228 lbs

Diameter of tubes 3 1/2 Pitch of tubes 4 3/4 x 4 7/8 Material of tube plates S. Thickness: Front 1" Back 1 1/16 Mean pitch of stays 9 5/8

Pitch across wide water spaces 14 1/2 Working pressures by rules 182 lbs Girders to Chamber tops: Material S Depth and thickness of girder at centre 7 3/4 x 1 3/4 Length as per rule 30" Distance apart 9 1/2 Number and pitch of Stays in each 3. 7 3/4

Working pressure by rules 164 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 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 -



DONKEY BOILER— No. 1 Description *Cyl. Multar plain furnaces*
 Made at *Starkton* By whom made *Sudron & Co L^d* When made *17.12.00* Where fixed *Duckhouse*
 Working pressure *90 lbs* tested by hydraulic pressure to *180 lbs* No. of Certificate *2369* Fire grate area *30* Description of safety valves *d. act spring*
 No. of safety valves *2* Area of each *7* Pressure to which they are adjusted *90 lb* If fitted with easing gear *Yes* If steam from main boilers can enter the donkey boiler *No* Dia. of donkey boiler *10'-0"* Length *10'-0"* Material of shell plates *S.* Thickness *17/32* Range of tensile strength *27-32* Descrip. of riveting long. seams *d. butt str.* Dia. of rivet holes *13/16* Whether punched or drilled *dr.* Pitch of rivets *4 1/2 x 2 1/4*
 Top of plating *3/2 B. str.* Percentage of strength of joint *96.5* Rivets *96.5* Thickness of shell plates *17/32* Thickness of furnace plates *17/32* Pitch of stays to do. *8*
 Dia. of stays *2 1/16* Diameter of furnace *Top 36* Bottom *36* Length of furnace *105* Thickness of furnace plate *17/32* Description of joint *lap* Thickness of furnace *C. chamber 17/32* Stays by *1 1/4* Stay *8 1/2* G. p. *nuts* Working pressure of shell by rules *93*
 Working pressure of furnace by rules *90 lbs* Diameter of uptake *3* Thickness of uptake plates *17/32* Thickness of water tubes *5/16*

SPARE GEAR. State the articles supplied:— *Propeller and tail shaft complete*
Top and bottom end bolts and nuts. Main bearing and coupling bolts and nuts. Feed, bilge & donkey pumps - valves
Bolts & nuts & plates

FOR BLAIR & CO., LIMITED

The foregoing is a correct description,
Walter Borrie Manufacturer of engines & main boilers

Dates of Survey while building: During progress of work in shops - *1900 July 3, Aug. 3, Sept. 4, Oct. 2, Nov. 5, Dec. 5, 1901 Jan. 15*
 During erection on board vessel - *Feb. 10, Mar. 3,*
 Total No. of visits *46*

Is the approved plan of main boiler forwarded herewith *Blair's*
 " " " donkey " *retained* *no plans*
 " " " for dup. *—*

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

These engines and boilers have been made under special survey and are of good workmanship and materials, they have been well fitted and secured on board the vessel, and on completion tried under steam with satisfactory results at moorings —

*This vessel's machinery is now in my opinion in good and efficient working condition and eligible to the notation of: **L.M.C. 3.01.** —*

It is submitted that this vessel is eligible for THE RECORD. **L.M.C. 3.01.**

J.S. 21.3.01

The amount of Entry Fee	£ 3 : 0 : 0	When applied for,
Special	£ 37 9 : 0	19.3.1901
Donkey Boiler Fee	£ : : 0	When received,
Travelling Expenses (if any)	£ : : 0	19.3.1901

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

Committee's Minute *FRI. MAR 22 1901*

Assigned



Certificate (if required) to be sent to

The Surveyors are requested not to sign or deliver the space for Committee's Minute.