

REPORT ON MACHINERY.

Port of Sunderland.

Received at London Office

JUN 5 1902

No. in Survey held at Sunderland Date, first Survey 13th Decr, 1901 Last Survey 7th May 1902
 Reg. Book. S.S. "Anglo Saxon" (Number of Visits 32)
 on the S.S. "Anglo Saxon" Tons { Gross 4263
 Net 2671
 Master A. Barnes Built at Sunderland By whom built Short Bros Ltd When built 1902
 Engines made at Sunderland By whom made Geo Clark Ltd when made 1902
 Boilers made at Sunderland By whom made Geo. Clark Ltd when made 1902
 Registered Horse Power Owners Nitrate Producers S.S. Co Ltd Port belonging to London
 Nom. Horse Power as per Section 28 476 489 Is Refrigerating Machinery fitted No Is Electric Light fitted Yes

ENGINES, &c.—Description of Engines Tri Compound Surface Condensing No. of Cylinders 3 No. of Cranks 3
 Dia. of Cylinders 28-45-76" Length of Stroke 45" Revs. per minute 70 Dia. of Screw shaft 15 3/8" as per rule 14 1/2-15 1/8" Lgh. of stern bush 6'-0"
 Dia. of Tunnel shaft 14" as per rule 12-13 1/2" Dia. of Crank shaft journals 14 3/4" as per rule 13-14 1/2" Dia. of Crank-pin 16 3/4" Size of Crank webs 22 1/2 x 10" Dia. of thrust shaft under collars 15 3/4" Dia. of screw 17'-9" Pitch of screw 18'-9" No. of blades 4 State whether moceable No Total surface 93 sq ft
 No. of Feed pumps Two Diameter of ditto 3 1/2" Stroke 31 1/2" Can one be overhauled while the other is at work Yes
 No. of Bilge pumps Two Diameter of ditto 4 1/2" Stroke 31 1/2" Can one be overhauled while the other is at work Yes
 No. of Donkey Engines 4 Sizes of Pumps FEED 10 1/2 x 18 x 8 1/2 9 7/11 x 2" No. and size of Suctions connected to both Bilge and Donkey pumps
 In Engine Room Two 3 1/2" & Three in Boiler Room well 3 1/2" In Holds, &c. Two in each 3 1/2" dia & one in Tunnel well 3 1/2" diameter
 No. of bilge injections 1 sizes 6 1/2" Connected to condenser, or to circulating pump C.P. Is a separate donkey suction fitted in Engine room & size yes 6"
 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 yes
 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 new vessel Is the screw shaft tunnel watertight yes
 Is it fitted with a watertight door yes worked from Top Platform

BOILERS, &c.— (Letter for record S) Total Heating Surface of Boilers 6493 sq ft Is forced draft fitted yes
 No. and Description of Boilers Three Ordinary Marine Type Working Pressure 180 lbs Tested by hydraulic pressure to 360 lbs
 Date of test 10-4-02 Can each boiler be worked separately yes Area of fire grate in each boiler 55.1 sq ft No. and Description of safety valves to each boiler 2 direct spring Area of each valve 9.62 sq in Pressure to which they are adjusted 180 lbs Are they fitted with easing gear yes
 Smallest distance between boilers or uptakes and bunkers or woodwork 1'-6" Mean dia. of boilers 14'-3" Length 11'-7" Material of shell plates S
 Thickness 1 7/32" Range of tensile strength 28 1/2-32 Are they welded or flanged Shell ends flanged Descrip. of riveting: cir. seams D.R. LAP long. seams T.R. B.S.
 Diameter of rivet holes in long. seams 1 5/16" Pitch of rivets 8 3/4" Lap of plates or width of butt straps 1'-8 1/8"
 Per centages of strength of longitudinal joint rivets 89 plate 85 Working pressure of shell by rules 204 Size of manhole in shell 16 x 13"
 Size of compensating ring 8 3/4 x 15 1/16 No. and Description of Furnaces in each boiler Three Adams' - Ring Material S Outside diameter 3'-8 1/2"
 Length of plain part top 3-5 1/2" Thickness of plates crown 5/8" Description of longitudinal joint welded No. of strengthening rings Two
 Working pressure of furnace by the rules 182 Combustion chamber plates: Material S Thickness: Sides 7/16" Back 7/16" Top 7/16" Bottom 27/32"
 Pitch of stays to ditto: Sides 1 1/4 x 9" Back 1 x 9" Top 9 x 8 1/8" If stays are fitted with nuts or riveted heads NUTS Working pressure by rules 194
 Material of stays S Diameter at smallest part 1.73" Area supported by each stay 104 Working pressure by rules 198 End plates in steam space: Material S Thickness 1 5/16" Pitch of stays 16 7/8 x 14 1/2" How are stays secured D. NUTS Working pressure by rules 214 Material of stays S
 Diameter at smallest part 2 5/16" Area supported by each stay 281 sq in Working pressure by rules 214 Material of Front plates at bottom S
 Thickness 3/4" Material of Lower back plate S Thickness 7/8" Greatest pitch of stays 1'-2" Working pressure of plate by rules 181
 Diameter of tubes 2 3/4" Pitch of tubes 4 x 4" Material of tube plates S Thickness: Front 1" Back 7/8" Mean pitch of stays 10"
 Pitch across wide water spaces 1-1 3/4" Working pressures by rules 203 Girders to Chamber tops: Material S Depth and thickness of girder at centre 9 3/8 x 1 x 2 Length as per rule 3'-0" Distance apart 9" Number and pitch of Stays in each Three 8 1/8"
 Working pressure by rules 181 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

DONKEY BOILER— No. 1 Description Cyl. Mult! 2 plain Furnaces.
 Made at Stockton By whom made Messrs Rible Bros When made 1902 Where fixed stokehole
 Working pressure 100 lbs tested by hydraulic pressure to 200 lbs No. of Certificate 2693 Fire grate area 33 sq ft Description of safety valves direct spring
 No. of safety valves 2 Area of each 4.9 Pressure to which they are adjusted 100 If fitted with easing gear yes If steam from main boilers can enter the donkey boiler no Dia. of donkey boiler 11'-0" Length 10'-0" Material of shell plates Steel Thickness 1/16" Range of tensile strength 27-32 Descrip. of riveting long. seams D. Butt. Straps D. R. Dia. of rivet holes 15/16" Whether punched or drilled Drilled Pitch of rivets 3 1/2"
 Lap of plating 9" ball strap Percentage of strength of joint 75 Rivets 79-5 Thickness of shell end plates 23/32" Pitch stays 17" x 17" No. of Stays to do. 10
 Dia. of stays. 2 1/8" Diameter of furnace Top 40" Bottom L Length of furnace 6'-5" Thickness of furnace plates 9/32" Description of joint welded Thickness of conv. chamf plates 15/32" top Stayed by 1 1/2" i. q 1/2" pitch nuts Working pressure of shell by rules 107 lbs
 Working pressure of furnace by rules 122 lbs Diameter of Back 3 1/2" tubes 3 1/2" Thickness of tube plates 23/32 B. 5/8" Thickness of water tubes 5/16"

SPARE GEAR. State the articles supplied:— Top and bottom end connecting rod, bolts and nuts, two main bearing bolts & nuts, one set of coupling bolts, feed and bilge pump valves, bolts nuts and iron assorted, propeller, etc.

The foregoing is a correct description,
 FOR GEORGE CLARK LIMITED General Manufacturer.

Dates of Survey { During progress of work in shops - - 1901 - Dec. 13, 21, 25. 1902 - Jan. 6, 13, 16, 27, 30. Feb. 7, 14, 20, 24. Mar. 4, 11, 18, 21, 25, 26. Apr. 4, 5, 7, 8, 9, 10, 11, 16, 17, 19, 24.
 { During erection on board vessel - - 20. May 27.
 while building { Total No. of visits 32.

Is the approved plan of main boiler forwarded herewith Yes
 " " " donkey " " " No

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

Material of screw shaft Scraper 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 ✓
 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 ✓

The machinery of this vessel has been constructed under Special Survey, the material and workmanship being good and efficient, and the engines when tried under steam worked satisfactory. The main steam pipes have been tested by hydraulic pressure to 400 lbs per square inch, and the pumps are in efficient working order.

In my opinion this vessel is eligible for the notification in the Register Book of L.M.C. 5.02.

It is submitted that
 this vessel is eligible for
 THE RECORD - L M C 5.02 F.D. Elec. Light.

The amount of Entry Fee. £ 3 : : When applied for, 3.6 1902
 Special £ 43 16. : :
 Donkey Boiler Fee £ : : When received, 18/6 1902
 Travelling Expenses (if any) £ : :
 Committee's Minute FRI. 6 JUN 1902
 Assigned + L.M.C. 5.02
F.D. Elec. Light

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



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