

REPORT ON MACHINERY.

Port of Sunderland.

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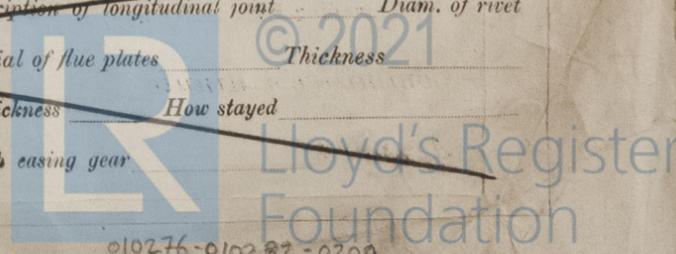
JUN 5 1902

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
 Master H. 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" Lgh. of stern bush 6'-0"
 Dia. of Tunnel shaft 14" Dia. of Crank shaft journals 14 3/4" 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 & 6 x 4 x 6 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 ye
 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 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 9/32" 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 80 Working pressure of shell by rules 204 Size of manhole in shell 16 x 13"
 Size of compensating ring 8 3/4 x 1 5/16 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 3/16" Back 3/16" Top 3/16" Bottom 27/32"
 Pitch of stays to ditto: Sides 9 1/4 x 9" Back 9 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 16 1/4" How are stays secured D. NUTS Working pressure by rules 214 Material of stays S
 Diameter at smallest part 2 1/16" 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 5/8"
 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 _____

for alterations in red see S.S. 28.6.02



DONKEY BOILER— No. 1 Description *Cyl. Mult. 2 plain Furnaces.*
 Made at *Stockton* By whom made *Messrs Fildy 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* centage of strength of joint Rivets *79.5* Thickness of shell 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 furnace plates *15/32" top sides 1/2" Back 3/8"* Stayed by *1 1/2" v. 9/2" pitch nuts* Working pressure of shell by rules *107 lbs*
 Working pressure of furnace by rules *122 lbs* Diameter of 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
Manufacturers.

Dates of Survey while building
 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.*
 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 *Scrap 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 : :
 Special £ 23 16. : :
 Donkey Boiler Fee £ : :
 Travelling Expenses (if any) £ : :
 When applied for. *3.6.02*
 When received. *18/6.02*

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

Committee's Minute **FRI. 6 JUN 1902**

Assigned *+ L.M.C. 5.02*



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