

REPORT ON MACHINERY.

Port of Sunderland

TUES. 8 JUL 1902

No. in Survey held at Sunderland Date, first Survey 20th March Last Survey 20th June 1902.
 Reg. Book. "Alto" (Number of Visits 16)
 Master E. W. Evans Built at Sunderland By whom built S. P. Austin & Sons. Ltd When built 1902
 Engines made at Sunderland By whom made Geo Clark & Co. Ltd when made 1902
 Boilers made at Sunderland By whom made Geo Clark & Co. Ltd when made 1902
 Registered Horse Power 215 Owners Gardiner & Reay Port belonging to Newcastle-on-Tyne
 Nom. Horse Power as per Section 28 215 Is Refrigerating Machinery fitted No Is Electric Light fitted No

ENGINES, &c.—Description of Engines Triple exp No. of Cylinders 3 No. of Cranks 3
 Dia. of Cylinders 21 - 35 - 5 1/2 Length of Stroke 39" Revs. per minute 70 Dia. of Screw shaft 10 1/2 as per rule 10 1/2 as fitted 10 1/2 Lgth. of stern bush 4' 1 1/8"
 Dia. of Tunnel shaft 10 1/4 as per rule 10 1/4 as fitted 10 1/4 Dia. of Crank shaft journals 10 3/4 as per rule 10 3/4 as fitted 10 3/4 Dia. of Crank pin 10 3/4 Size of Crank webs 16 1/2 x 7 1/2 Dia. of thrust shaft under collars 11" Dia. of screw 15' 0" Pitch of screw 16' 0" No. of blades 4 State whether moveable No Total surface 66 sq ft
 No. of Feed pumps 2 Diameter of ditto 2 7/8" Stroke 23" Can one be overhauled while the other is at work Yes
 No. of Bilge pumps 2 Diameter of ditto 4 1/4" Stroke 23" Can one be overhauled while the other is at work Yes
 No. of Donkey Engines 2 Sizes of Pumps BALLET 10 x 10 1/4 x 10 No. and size of Suctions connected to both Bilge and Donkey pumps
 In Engine Room 2 - 3" dia In Holds, &c. 2 in each hold. 3" dia after well 3" dia
 No. of bilge injections 1 sizes 4" Connected to condenser, or to circulating pump C.P. Is a separate donkey suction fitted in Engine room & size yes 5" dia
 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 3373 sq ft Is forced draft fitted No
 No. and Description of Boilers 2 single ended ord. marine type Working Pressure 160 lbs Tested by hydraulic pressure to 320
 Date of test 9-6-02 Can each boiler be worked separately yes Area of fire grate in each boiler 49.35 No. and Description of safety valves to each boiler 2 direct spring loaded Area of each valve 5.939 Pressure to which they are adjusted 160 lbs Are they fitted with easing gear yes
 Smallest distance between boilers or uptakes and bunkers or woodwork 1' 6" Mean dia. of boilers 13' 5 1/2" Length 10' 6" Material of shell plates S
 Thickness 63" Range of tensile strength 28 1/2 - 32 Are they welded or flanged end plates flanged Descrip. of riveting: cir. seams D.R.L. long. seams T.R.D.B.
 Diameter of rivet holes in long. seams 1 1/16 Pitch of rivets 7 1/16 Width of butt straps 16 3/8
 Per centages of strength of longitudinal joint 105 Working pressure of shell by rules 161 Size of manhole in shell 16" x 13"
 Size of compensating ring 8 3/4 x 1" No. and Description of Furnaces in each boiler 3 plain Material S Outside diameter 3' 5"
 Length of plain part 7' 0" Thickness of plates 4 1/4" Description of longitudinal joint weld No. of strengthening rings 2 on bottom
 Working pressure of furnace by the rules 164 Combustion chamber plates: Material S Thickness: Sides 21/32 Back 21/32 Top 21/32 Bottom 3/4
 Pitch of stays to ditto: Sides 9 1/2 x 9 1/4 Back 9 1/2 Top 9 1/4 x 8 3/4 If stays are fitted with nuts or riveted heads nuts Working pressure by rules 162
 Material of stays S Diameter at smallest part 1 7/32 Area supported by each stay 90 Working pressure by rules 170 End plates in steam space:
 Material S Thickness 1 1/16 Pitch of stays 18 1/2 x 18 How are stays secured nuts Working pressure by rules 160 Material of stays S
 Diameter at smallest part 2 7/8 Area supported by each stay 333 Working pressure by rules 160 Material of Front plates at bottom S
 Thickness 3/4 Material of Lower back plate S Thickness 27/32 Greatest pitch of stays 14" Working pressure of plate by rules 163
 Diameter of tubes 3 1/4 ext Pitch of tubes 4 1/32 x 4 3/8 Material of tube plates S Thickness: Front 1 1/16 Back 23/32 Mean pitch of stays 8 3/4
 Pitch across wide water spaces 14 1/16 Working pressures by rules 205 Girders to Chamber tops: Material S Depth and
 thickness of girder at centre 7 3/4 x 3/4 x 2 Length as per rule 30 Distance apart 8 3/4 Number and pitch of Stays in each 2 - 9 1/4 p
 Working pressure by rules 164 Superheater or Steam chest; how connected to boiler none Can the superheater be shut off and the boiler worked
 separately yes 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 —
 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 —

Hadden 200805 Sld

W1103-0203

DONKEY BOILER— No. 1 Description *Cyl Mult 2 plain furnaces*
Made at *Stockton* By whom made *Messrs Riley Bros* When made *16.5.02* Where fixed *Stokehold*
Working pressure *160* tested by hydraulic pressure to *320* No. of Certificate *2754* Fire grate area *26 1/4* Description of safety valves *spring*
No. of safety valves *2* Area of each *3.14* Pressure to which they are adjusted *160 lbs* If fitted with easing gear *yes* If steam from main boilers can enter the donkey boiler *no* Dia. of donkey boiler *9'6"* Length *2'6"* Material of shell plates *S* Thickness *25/32* Range of tensile strength *27.32* Descrip. of riveting long. seams *doub. butt straps* Dia. of rivet holes *15/16* Whether punched or drilled *drilled* Pitch of rivets *1 1/2" - 2"*
Lap of plating *13" butt straps* Per centage of strength of joint Rivets *94* Plates *86.6* Thickness of shell *25/32* end plates *15/16* Pitch stay of do. *15" x 16"* No. of Stays to do. *5*
Dia. of stays *2 1/2" off S* Diameter of furnace Top *33"* Bottom *2* Length of furnace *5' 11"* Thickness of furnace plates *19/32* Description of joint *weld* Thickness of *G.C.H.R.* plates *sides 9/16* Stayed by *1 3/8" of 1 1/8" S.S. 8 3/4" to 8" pitch* Working pressure of shell by rules *16 1/2 lbs*
Working pressure of furnace by rules *160 lbs* Diameter of *3 1/4" 4 1/2" tubes* Thickness of *2 1/32* plates *back 2 1/32* Thickness of *stay* tubes *5/16"*

SPARE GEAR. State the articles supplied:—

Top & bottom end connecting rod, bolts, nuts, two main bearing bolts & nuts, one set coupling bolts, feed & bilge pump valves, bolts, nuts & iron assorted propeller &c.

The foregoing is a correct description,

FOR GEORGE CLARK LIMITED

Manufacturers.

Dates { During progress of work in shops - - }
of Survey { During erection on board vessel - - }
while building { Total No. of visits 16 }

1902 - Mar 20. 21. 24. Apr. 8. 11. 15. May 29. June 3. 6. 7. 9. 12. 13. 17. 18. 20.

Is the approved plan of main boiler forwarded herewith *yes*

" " " donkey " " " *yes*

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 *No*

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 *No*

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 *No*

The machinery of this vessel has been constructed under Special Survey, the material & workmanship being good & efficient & the engines when tried under steam worked satisfactorily.

The pumps, watertight doors, and steam steering gear are in good working order & the main steam pipes have been tested to 400 lbs per square inch.

In my opinion this vessel is eligible for the notification in the Register Book of *+ L.M.G. 6.02*

It is submitted that this vessel is eligible for THE RECORD - *+ L M C 6:02*

The amount of Entry Fee. £ *2* : : When applied for. *1.7.02*
Special £ *30.15* : :
Donkey Boiler Fee £ : :
Travelling Expenses (if any) £ : : When received. *4.7.02*

Committee's Minute

FRI. 11 JUL 1902

Assigned

+ L M C 6.02

Pat R Salmon
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping



© 2021 Lloyd's Register Foundation