

REPORT ON MACHINERY.

Port of Sunderland

Received at London Office SAT. 27 SEP 1902

No. in Survey held at Sunderland
Reg. Book. on the S.S. "Habylio."

Date, first Survey 25th March Last Survey 16th August 18902
(Number of Visits 14)

Master Built at Newcastle By whom built Wood Skinner & Co. 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 Sir R. Dixon & Co. Port belonging to Home

Nom. Horse Power as per Section 28 206 Is Electric Light fitted Yes

ENGINES, &c.—Description of Engines Triple exp. No. of Cylinders 3 No. of Cranks 3 1/2

Diameter of Cylinders 20 1/2 - 33 - 54 Length of Stroke 36 Revolutions per minute 70 Diameter of Screw shaft 10 1/2

Diameter of Tunnel shaft 10 1/2 Diameter of Crank shaft journals 10 3/8 Diameter of Crank pin 10 3/8 Size of Crank webs 15" x 4 1/2

Diameter of screw 14' 0" Pitch of screw 15' 0" No. of blades 4 State whether moveable No. Total surface 61 3/4 sq

No. of Feed pumps 2 Diameter of ditto 2 3/4 Stroke 22" Can one be overhauled while the other is at work yes

No. of Bilge pumps 2 Diameter of ditto 3 1/2 Stroke 22" Can one be overhauled while the other is at work yes

No. of Donkey Engines 2 Sizes of Pumps FEED 6x4x6 BALLS 7 1/2 x 9 x 10 No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room 3 - 3" dia. In Holds, &c. Aft. hold 1 in centre 3"

No. of bilge injections 1 sizes 4" Connected to condenser, or to circulating pump Ford hold 1 in centre 3" dia. 2 in wings 2 1/2 dia. 2 in wings 2 1/2 dia. C.P. Is a separate donkey suction fitted in Engine room & size 4" 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's 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 3493 1/2 sq Is forced draft fitted No.

No. and Description of Boilers 2 single ended marine type Working Pressure 170 Tested by hydraulic pressure to 340

Date of test 8.8.02 Can each boiler be worked separately yes Area of fire grate in each boiler 50.3 No. and Description of safety valves to

each boiler 2 direct spring loaded Area of each valve 7.06 sq Pressure to which they are adjusted 170 Are they fitted

with easing gear yes Smallest distance between boilers or uptakes and bunkers or woodwork 2' 0" Mean diameter of boilers 13' - 10 1/16

Length 10' 0" Material of shell plates S Thickness 1 1/8 Description of riveting: circum. seams D. R. L. long. seams J. R. D. B. S.

Diameter of rivet holes in long. seams 1 1/8 Pitch of rivets 7 1/2 Top of plates or width of butt straps 17 1/8

Per centages of strength of longitudinal joint rivets 92 Working pressure of shell by rules 170 Size of manhole in shell 16" x 13"

Size of compensating ring 8 3/4 x 1 1/8 No. and Description of Furnaces in each boiler 3 Plain Material S Outside diameter 3' - 5 3/4

Length of plain part 6.64 Thickness of plates 3/4 Description of longitudinal joint Weld No. of strengthening rings 2 on bottom

Working pressure of furnace by the rules 175 Combustion chamber plates: Material S Thickness: Sides 1/8 Back 1/8 Top 1/8 Bottom 1/8 13/16

Pitch of stays to ditto: Sides 9 1/2 x 10 Back 10 1/4 x 9 Top 9 1/2 x 9 If stays are fitted with nuts or riveted heads NUTS Working pressure by rules 171

Material of stays S Diameter at smallest part 1 1/32 Area supported by each stay 95 Working pressure by rules 192 End plates in steam space:

Material S Thickness 1 1/32 Pitch of stays 19" x 19" How are stays secured 3 NUTS Working pressure by rules 172 Material of stays S

Diameter at smallest part 2 1/8 Area supported by each stay 384 Working pressure by rules 183 Material of Front plates at bottom S

Thickness 3/4 Material of Lower back plate S Thickness 3/32 Greatest pitch of stays 14 3/8 Working pressure of plate by rules 171

Diameter of tubes 3 1/4 Pitch of tubes 4 1/2 x 4 3/8 Material of tube plates S Thickness: Front 5/16 Back 3/32 Mean pitch of stays 9"

Pitch across wide water spaces 14 1/4 Working pressures by rules 171 Girders to Chamber tops: Material S Depth and

thickness of girder at centre 8 1/2 x 1 1/8 x 2 Length as per rule 2.42 Distance apart 9" Number and pitch of Stays in each 2.9 1/2 ft

Working pressure by rules 174 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



Lloyd's Register of Shipping - Copyable (L.R.)

DONKEY BOILER— Description *Bochran's ordinary cross tube*
 Made at *Annan* By whom made *Bochran & Co.* When made *6.7.02* Where fixed *Stokehold*
 Working pressure *80* tested by hydraulic pressure to *160* No. of Certificate *6277* Fire grate area *25 1/2* Description of safety valves *Direct Spring*
 No. of safety valves *2* Area of each *7* Pressure to which they are adjusted *80* If fitted with easing gear *No* If steam from main boilers can enter the donkey boiler *No.* Diameter of donkey boiler *4' 0"* Length *14' 0"* Material of shell plates *S.S.* Thickness *1 5/8*
 Description of riveting long seams *double* Diameter of rivet holes *3 7/32* Whether punched or drilled *drilled* Pitch of rivets *2.72*
 Lap of plating *4 1/8* Per centage of strength of joint Rivets *74.6* Thickness of shell crown plates *9/16* Radius of do. *7' 0"* No. of Stays to do. *8*
 Dia. of stays. *2 1/4"* Diameter of furnace Top *6' 0 3/8"* Bottom *6' 11 1/2"* Length of furnace *6' 4"* Thickness of furnace plates *1 1/8* Description of joint *riveted* Thickness of furnace crown plates *5 3/8* Stayed by *same as crown* Working pressure of shell by rules *88 lbs.*
 Working pressure of furnace by rules *98 lbs.* Diameter of uptake *15"* Thickness of uptake plates *3 3/8"* Thickness of water tubes *3 3/8"*

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 propellers

The foregoing is a correct description,

FOR GEORGE CLARK LIMITED,
Glasgow Manufacturer of Marine Engines & Boilers

Dates of Survey while building
 During progress of work in shops— *1902. Mar: 25. Apr. 8. 11 June 6. 13 July 9. 11. 15 22. 24. 29.*
 During erection on board vessel— *Aug: 6. 13. 16. - Nov: Aug: 21. Sep: 28 - 4 Visits.*
 Total No. of visits *14*

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

ENGINES—Length of stern bush *5' 0"* Diameter of crank shaft journals *as per rule 10.3* Diameter of thrust shaft under collars *10 1/2*
 BOILERS—Range of tensile strength *28 1/2 - 32* Are they welded or flanged *and plates flanged* DONKEY BOILERS—No. *One* Range of tensile strength *27 - 32*
 Is the approved plan of main boiler forwarded herewith *No.* Is the approved plan of donkey boiler forwarded herewith *No.*
 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 *one liner*

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 & steering gear are in good working order & the main steam pipes have been tested by hydraulic pressure to 400 lbs. per sq. inch.

In my opinion this vessel is eligible for the notification in the Register Book of *L.M.C. 9-02.*

It is submitted that this vessel is eligible for THE RECORD—*L.M.C. 9:02* Etc. *Light*

The amount of Entry Fee... £ *2* : : When applied for, *John H. Heck.*
 Special ... £ *30* : *6* : : *10.9.02*
 Donkey Boiler Fee ... £ : : : *27.9.02*
 Travelling Expenses (if any) £ : : : *17/9/02*
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping. *Pat. Salmon*

Committee's Minute *TUES. 30 SEP 1902*
 Assigned *+ L.M.C. 9.02*

Certificate (if required) to be sent to
 (The Surveyors are requested not to write on or below the space for Committee's Minute)

