

REPORT ON MACHINERY.

No. 14038

JUL 13 SEP 1904

Port of *Greenock*.No. in Survey held at *Port Glasgow*.Date, first Survey *15th April*.Last Survey *30th Aug^r 1904*

Reg. Book.

(Number of Visits *41*.)on the *Screw Steamer "Silvia"*.Master *.* Built at *Port Glasgow*. By whom built *Glyde Shipb^y & Eng^r 6th Jan^y 1904*.Engines made at *Port Glasgow*. By whom made *Glyde Shipb^y & Eng^r 6th Jan^y 1904*.Boilers made at *Port Glasgow*. By whom made *Glyde Shipb^y & Eng^r 6th Jan^y 1904*.Registered Horse Power *.* Owners *.* Port belonging to *Glasgow*.Nom. Horse Power as per Section 28 *202*. 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 *21 - 33 - 57*. Length of Stroke *36* Revs. per minute *40* Dia. of Screw shaft *as per rule 11.2* Material of *Steel*.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 tightin 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 partbetween the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive *—* If twoliners are fitted, is the shaft lapped or protected between the liners. Length of stern bush *60"*.Dia. of Tunnel shaft *as per rule 9.8* Dia. of Crank shaft journals *as per rule 10.3* Dia. of Crank pin *10.2* Size of Crank webs *7x20* Dia. of thrust shaft undercollars *10.2* Dia. of screw *14' 0"* Pitch of screw *14' 0"* No. of blades *4* State whether moveable *no* Total surface *60 sq. ft.*No. of Feed pumps *2* Diameter of ditto *3"* Stroke *18"* Can one be overhauled while the other is at work *Yes*.No. of Bilge pumps *2* Diameter of ditto *4"* Stroke *18"* Can one be overhauled while the other is at work *Yes*.No. of Donkey Engines *Three* Sizes of Pumps *General Ballast Donkey Pumps 6"x4"x6" 8"x9"x12" 4"x22"x4"* No. and size of Suctions connected to both Bilge and Donkey pumpsIn Engine Room *Four 3" dia.* In Holds, &c. *Fore Hold: Two 3" dia. Main Hold: Two 3" dia.**After Hold: One 3" dia. & Two 2 1/2" dia. Tunnel Well: One 2 1/2" dia.*No. of bilge injections *1* sizes *5"* Connected to condenser, or to circulating pump *C.P.* Is a separate donkey suction fitted in Engine room & size *Yes: 3 1/2"*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 *—*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 *B*.) Total Heating Surface of Boilers *3150 sq. ft.* Is forced draft fitted *no*.No. and Description of Boilers *Two Cylind^r Mult^r Single Ended* Working Pressure *160 lbs.* Tested by hydraulic pressure to *320 lbs.*Date of test *27/7/04* Can each boiler be worked separately *Yes* Area of fire grate in each boiler *52 sq. ft.* No. and Description of safety valves toeach boiler *2: Relief Spring* Area of each valve *4.06"* 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 *About 9"* Mean dia. of boilers *13' 9"* Length *10' 0"* Material of shell plates *Steel*Thickness *1 1/2"* Range of tensile strength *28-32 tons* Are they welded or flanged *no* Descrip. of riveting: cir. seams *Lap Double* long. seams *Double Butt Straps*Diameter of rivet holes in long. seams *1 1/2"* Pitch of rivets *4"* *3 3/8"* Lap of plates or width of butt straps *1' 6"*Per centages of strength of longitudinal joint rivets *84.9* plate *83.6* Working pressure of shell by rules *160 lbs.* Size of manhole in shell *2' 6" x 12"*Size of compensating ring *End plate flanged* No. and Description of Furnaces in each boiler *3: Daytons* Material *Steel* Outside diameter *40"*Length of plain part *top 6' 6" bottom 6' 6"* Thickness of plates *top 1 1/2" bottom 3 1/2"* Description of longitudinal joint *Weld* No. of strengthening rings *—*Working pressure of furnace by the rules *161 lbs.* Combustion chamber plates: Material *Steel* Thickness: Sides *9/16"* Back *1 1/2"* Top *9/16"* Bottom *5/8"*Pitch of stays to ditto: Sides *8' x 7 1/2"* Back *8 1/2' x 8 1/2"* Top *7 1/2' x 8"* If stays are fitted with nuts or riveted heads *Nuts* Working pressure by rules *168 lbs.*Material of stays *Steel* Diameter at smallest part *1 1/8"* Area supported by each stay *72"* Working pressure by rules *163 lbs.* End plates in steam space:Material *Steel* Thickness *7/8"* Pitch of stays *16' x 15"* How are stays secured *Double larks* Working pressure by rules *161 lbs.* Material of stays *Steel*Diameter at smallest part *2 1/2"* Area supported by each stay *240"* Working pressure by rules *179 lbs.* Material of Front plates at bottom *Steel*Thickness *7/8"* Material of Lower back plate *Steel* Thickness *7/8"* Greatest pitch of stays *13 1/4"* Working pressure of plate by rules *181 lbs.*Diameter of tubes *3 1/2"* Pitch of tubes *4 1/2' x 4 1/2'* Material of tube plates *Steel* Thickness: Front *1 1/2"* Back *3/4"* Mean pitch of stays *9 1/2"*Pitch across wide water spaces *14"* Working pressures by rules *194 lbs. 171 lbs.* Girders to Chamber tops: Material *Steel* Depth andthickness of girder at centre *7 1/4' x 1 1/4'* Length as per rule *28 1/2"* Distance apart *7 1/2'* Number and pitch of Stays in each *2: 8"*Working pressure by rules *172 lbs.* Superheater or Steam chest; how connected to boiler *None* Can the superheater be shut off and the boiler workedseparately *—* Diameter *—* Length *—* Thickness of shell plates *—* Material *—* Description of longitudinal joint *—* Diam. of rivetholes *—* 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 *—*

009481-009492-0032

DONKEY BOILER— No. *One* Description *Cylindrical Mult. Single ended with 2 plain furnaces.*
 Made at *Port Glasgow* By whom made *Clyde Shipbuilding & Engineering Co. Ltd.* When made *2/1/04* Where fixed *on deck*
 Working pressure *90 lb* tested by hydraulic pressure to *180 lb* No. of Certificate *65* Fire grate area *22 sq ft* Description of safety valves *Direct Spring*
 No. of safety valves *2* Area of each *4.9 sq in.* Pressure to which they are adjusted *92 lb* If fitted with easing gear *Yes* If steam from main boilers can enter the donkey boiler *No* Dia. of donkey boiler *9' 0"* Length *8' 0"* Material of shell plates *Steel* Thickness *3/16"* Range of tensile strength *28-32 tons* Descrip. of riveting long. seams *Lap Double riv.* Dia. of rivet holes *1 1/2"* Whether punched or drilled *Drilled* Pitch of rivets *3 1/2"*
 Lap of plating *5 3/4"* Per centage of strength of joint *72.5* Rivets *72.5* Thickness of shell plates *3/16"* Radios of do. *1 1/2"* Pitch No. of Stays *13 1/2 x 1 1/4"*
 Dia. of stays *1 1/2"* Diameter of furnace *Top 2' 10" Bottom 2' 10"* Length of furnace *5' 4"* Thickness of furnace plates *3/16"* Description of joint *Single lap riv.* Thickness of furnace crown plates *3/16"* Stayed by *1 1/2" stays 9 x 8"* Working pressure of shell by rules *92 lb*
 Working pressure of furnace by rules *106 lb* Diameter of uptake *3"* Thickness of uptake plates *3/16"* Thickness of water tubes *5" 4 1/2 x 1 1/4"*

SPARE GEAR. State the articles supplied:— *Two main Bearing Bolt nuts, 2 Crank pin Bolt nuts, 2 Crosshead Bolt nuts, 1 set Coupling Bolt nuts, 1 set Feed & Sledge pump valves, 1 Propeller, Bolt nuts of various sizes etc.*

The foregoing is a correct description,

Manufacturer.

THE CLYDE SHIPBUILDING & ENGINEERING CO. LIMITED,

John Muir

Director.

Dates of Survey while building { During progress of work in shops - - 1904. April 15. 21. 25. 26. 28. 29. May 2. 6. 9. 11. 16. 20. 25. 30. 31. June 1. 3.
 { During erection on board vessel - - 9. 10. 14. 17. 21. 23. 28. July 4. 20. 21. 25. 27. Aug 2. 5. 8. 10. 12. 16. 17. 19. 20. 24. 26. 30
 Total No. of visits *41.*

Is the approved plan of main boiler forwarded herewith *Yes.*

" " " donkey " " " *Yes.*

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

The Engines and Boilers of this vessel have been built under Special Survey and the materials and workmanship are good. When completed they were examined while running a full power trial in the Firth, and found to work well.

*The machinery throughout is now in good and efficient condition and eligible in my opinion to have the record of **LMC 8,04** marked in the Society's Register Book.*

It is submitted that
 this vessel is eligible for
THE RECORD L.M.C. 8.04

13.9.04
13.9.04

The amount of Entry Fee. £ *2* : . : . When applied for, *1/9/1904*
 Special £ *30* : *2* : . : .
 Donkey Boiler Fee £ . : . : . When received, *2/9/1904*
 Travelling Expenses (if any) £ . : . : .

Shiff. M. K. Austin.
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute *Glasgow 12 SEP 1904*

Assigned

LMC 8.04

MACHINERY CERTIFICATE
 WRITTEN



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