

# REPORT ON MACHINERY.

No. 12723

Port of Greenock

Received at London Office \_\_\_\_\_

10th SEP 1903

No. in Survey held at Port Glasgow Date, first Survey 10th March 1903 Last Survey 27th Aug 1903  
 Reg. Book. \_\_\_\_\_ (Number of Visits 18)  
 1098. on the Screw Steamer "Volne" Tons } Gross \_\_\_\_\_  
 Master \_\_\_\_\_ Built at Port Glasgow By whom built Byde Shipbuilding & Eng<sup>g</sup> Co<sup>ys</sup> Ltd When built 1903 } Net \_\_\_\_\_  
 Engines made at Port Glasgow By whom made Byde Shipbuilding & Eng<sup>g</sup> Co<sup>ys</sup> Ltd when made 1903  
 Boilers made at Port Glasgow By whom made Byde Shipbuilding & Eng<sup>g</sup> Co<sup>ys</sup> Ltd when made 1903  
 Registered Horse Power \_\_\_\_\_ Owners Goole Steam Shipping Co<sup>ys</sup> Ltd Port belonging to Goole  
 Nom. Horse Power as per Section 28 239 Is Refrigerating Machinery fitted No. Is Electric Light fitted No.

ENGINES, &c.—Description of Engines Triplic expansion No. of Cylinders Three No. of Cranks Three  
 Dia. of Cylinders 21"-35"-5-8" Length of Stroke 36" Revs. per minute 100 Dia. of Screw shaft 11.6" Material of screw shaft Iron  
 Is the screw shaft fitted with a continuous liner the whole length of the stern tube No liners 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 ✓ Length of stern bush 4'3"  
 Dia. of Tunnel shaft 10.3" as per rule 10.3" Dia. of Crank shaft journals 10.8" as per rule 10.8" Dia. of Crank pin 11" Size of Crank webs 21 1/2 x 3 1/2" Dia. of thrust shaft under collars 11" Dia. of screw 12'9" Pitch of screw 15'6" No. of blades 4 State whether moveable No. Total surface 58 sq. ft.  
 No. of Feed pumps 2 Diameter of ditto 3 1/4" Stroke 20" Can one be overhauled while the other is at work Yes  
 No. of Bilge pumps 2 Diameter of ditto 3 1/4" Stroke 20" Can one be overhauled while the other is at work Yes  
 No. of Donkey Engines Two Sizes of Pumps 6" x 4 1/4" x 6" 3 1/2" x 3 1/2" x 6" No. and size of Suctions connected to both Bilge and Donkey pumps Both Duplex  
 In Engine Room Three: one 2 1/4" dia. Two 2" dia. In Holds, &c. No. 1 Hold: 1-3" dia. No. 2 Hold: 2-2" dia. No. 3 Hold: 2-2" dia. Tunnel Well 1-2 1/4" 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: 2 1/4"  
 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  
 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 Hold Suctions How are they protected Wood casings  
 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 3670 sq. ft. Is forced draft fitted No.  
 No. and Description of Boilers Two: Cylindrical, Single Ended Working Pressure 180 lbs Tested by hydraulic pressure to 360 lbs  
 Date of test 29/7/03 Can each boiler be worked separately Yes Area of fire grate in each boiler 40 1/2 sq. ft. No. and Description of safety valves to each boiler Two: Direct Spring Area of each valve 7.07 sq. in. Pressure to which they are adjusted 185 lbs Are they fitted with easing gear Yes  
 Smallest distance between boilers or uptakes and bunkers or woodwork About 6ft. Mean dia. of boilers 13'6 1/4" Length 12'0" Material of shell plates Steel  
 Thickness 1 3/8" Range of tensile strength 28-32 tons Are they welded or flanged No. Descrip. of riveting: cir. seams Lap Double long. seams Double Butt Shaps.  
 Diameter of rivet holes in long. seams 1 1/8" Pitch of rivets 9 5/8" 4 3/8" Lap of plates on width of butt straps 20 1/2"  
 Per centages of strength of longitudinal joint 91.5% Working pressure of shell by rules 227 lbs Size of manhole in shell 16" x 12"  
 Size of compensating ring 32" x 21" x 1 1/8" No. and Description of Furnaces in each boiler 3: Brown Material Steel Outside diameter 42"  
 Length of plain part 7'6" Thickness of plates 9" Description of longitudinal joint Weld No. of strengthening rings partial at C.C. bottom  
 Working pressure of furnace by the rules 193 lbs Combustion chamber plates: Material Steel Thickness: Sides 1/8" Back 1/8" Top 1/8" Bottom 15/16"  
 Pitch of stays to ditto: Sides 9" x 8 1/2" Back 9" x 9" Top 9" x 8 1/2" If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 202 lbs  
 Material of stays Steel Diameter at smallest part 1 5/8" Area supported by each stay 81 sq. in. Working pressure by rules 229 lbs End plates in steam space: Material Steel Thickness 1 1/2" Pitch of stays 18" x 17 1/2" How are stays secured 8 lbs nuts Working pressure by rules 229 lbs Material of stays Steel  
 Diameter at smallest part 3 1/4" Area supported by each stay 353 sq. in. Working pressure by rules 226 lbs Material of Front plates at bottom Steel  
 Thickness 1 5/8" Material of Lower back plate Steel Thickness 1 5/8" Greatest pitch of stays 14 1/2" Working pressure of plate by rules 214 lbs  
 Diameter of tubes 3 1/4" Pitch of tubes 4 1/2" x 4 1/2" Material of tube plates Steel Thickness: Front 1 5/8" Back 1 5/8" Mean pitch of stays 10'3 1/2"  
 Pitch across wide water spaces 14 1/2" Working pressures by rules 214 lbs Girders to Chamber tops: Material Steel Depth and thickness of girder at centre 10 1/2" x 1 1/2" Length as per rule 34 1/4" Distance apart 9" Number and pitch of Stays in each 3: 9"  
 Working pressure by rules 205 lbs 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

Is a Report also sent on the Hull of the Ship? If not, state whether, and when, one will be sent?



W923-0201

**DONKEY BOILER—** No. *None* Description

Made at \_\_\_\_\_ By whom made \_\_\_\_\_ When made \_\_\_\_\_ Where fixed \_\_\_\_\_

Working pressure tested by hydraulic pressure to \_\_\_\_\_ No. of Certificate \_\_\_\_\_ Fire grate area \_\_\_\_\_ Description of safety valves \_\_\_\_\_

No. of safety valves \_\_\_\_\_ Area of each \_\_\_\_\_ Pressure to which they are adjusted \_\_\_\_\_ If fitted with easing gear \_\_\_\_\_ If steam from main boilers can enter the donkey boiler \_\_\_\_\_

Dia. of donkey boiler \_\_\_\_\_ Length \_\_\_\_\_ Material of shell plates \_\_\_\_\_ Thickness \_\_\_\_\_ Range of tensile strength \_\_\_\_\_

Descrip. of riveting long. seams \_\_\_\_\_ Dia. of rivet holes \_\_\_\_\_ Whether punched or drilled \_\_\_\_\_ Pitch of rivets \_\_\_\_\_

Lap of plating \_\_\_\_\_ Per centage of strength of joint \_\_\_\_\_ Rivets \_\_\_\_\_ Thickness of shell crown plates \_\_\_\_\_ Radius of do. \_\_\_\_\_ No. of Stays to do. \_\_\_\_\_

Dia. of stays \_\_\_\_\_ Diameter of furnace Top \_\_\_\_\_ Bottom \_\_\_\_\_ Length of furnace \_\_\_\_\_ Thickness of furnace plates \_\_\_\_\_ Description of joint \_\_\_\_\_

Thickness of furnace crown plates \_\_\_\_\_ Stayed by \_\_\_\_\_ Working pressure of shell by rules \_\_\_\_\_

Working pressure of furnace by rules \_\_\_\_\_ Diameter of uptake \_\_\_\_\_ Thickness of uptake plates \_\_\_\_\_ Thickness of water tubes \_\_\_\_\_

**SPARE GEAR.** State the articles supplied:— *3 crank shaft, Propeller shaft & propeller, 2 crank pin Bolts, 2 cross-head Bolts, 2 main Bearing Bolts, 1 set Coupling Bolts, 1 set Piston Bolts, 1 set Feed & Bilge pump valves Assorted Bolt nuts. Iron granular sizes.*

The foregoing is a correct description,

THE GLYDE SHIPBUILDING & ENGINEERING CO. LIMITED,

Manufacturer.

*John R. ...* Secretary.

Dates of Survey while building	During progress of work in shops -	1903. March 10. 17. 20. 24. April 1. 2. 4. 9. 13. 14. 15. 16. 24. 30. May 7. 8. 13. 20	
		During erection on board vessel -	26. 29. June 1. 2. 5. 10. 16. 17. 18. 19. 25. 29. July 15. 16. 17. 20. 22. 24. 27. 29. Aug 4. 6. 10
		Total No. of s	12. 14. 18. 20. 21. 25. 27. H8.

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

“ “ “ donkey “ “ “ *No*

**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 under steam on a full power trial in the Tirth, and found to work satisfactorily.

The machinery throughout is now in good and efficient condition and eligible in my opinion to have the record of **LMC 8,03** marked in the Society's Register Book.

It is submitted that this vessel is eligible for THE RECORD **LMC 8.03.**

*Rms.*  
*8.9.03.*  
*9.9.03*

*General*

Certificate (if required) to be sent to Committee's Minutes.

The amount of Entry Fee.	£ 2 : . . .	When applied for,	1.9.1903
Special	£ 31 : 9	When received,	3.9.1903
Donkey Boiler Fee	£ . . .		
Travelling Expenses (if any)	£ . . .		

*John R. Austin*  
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute Glasgow - 7 SEP 1903  
Assigned **+ LMC 8.03.** *b. b. c.*

