

REPORT ON MACHINERY.

No. 14509

Port of Greenock

Received at London Office WES. 12 DEC 1905

No. in Survey held at Port Glasgow Date, first Survey 25th July 1905 Last Survey 26th Nov 1905

Reg. Book. "DON CARLOS" (Number of Visits 37)

on the SCREW STEAMER "DON CARLOS"

Tons } Gross 1784.20
Net 1093.62
When built 1905

Master A. Pherson Built at Port Glasgow By whom built Blyde SB & Eng. 604 diam.

Engines made at Port Glasgow By whom made Blyde SB & Eng. 604 diam. when made 1905

Boilers made at Port Glasgow By whom made Blyde SB & Eng. 604 diam. when made 1905

Registered Horse Power _____ Owners _____ Port belonging to Lota

Nom. Horse Power as per Section 28 244 Is Refrigerating Machinery fitted No Is Electric Light fitted Yes

ENGINES, &c.—Description of Engines Triplic expansion No. of Cylinders Three No. of Cranks Three

Dia. of Cylinders 22"-33"-59" Length of Stroke 39" Revs. per minute 40 Dia. of Screw shaft 12" Material of screw shaft 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 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 No

If two liners are fitted, is the shaft lapped or protected between the liners Yes Length of stern bush 4' 2"

Dia. of Tunnel shaft 10.5" Dia. of Crank shaft journals 11.3" Dia. of Crank pin 12" Size of Crank webs 2 1/2" x 1/2" Dia. of thrust shaft under collars 12"

Dia. of screw 15' 2" Pitch of screw 16' 3" No. of blades 4 State whether moveable No Total surface 74 sq ft.

No. of Feed pumps 2 Diameter of ditto 3" Stroke 21" Can one be overhauled while the other is at work Yes

No. of Bilge pumps 2 Diameter of ditto 4" Stroke 21" Can one be overhauled while the other is at work Yes

No. of Donkey Engines Three Sizes of Pumps (5x5x6) (18x9x8) (6x4x6) No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room Two - 3" dia. In Holds, &c. Forward Hold Two - 3" dia.

After Hold Three - 3" dia. Tunnel well one - 2 1/2" dia.

No. of bilge injections 1 sizes 6 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 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 Awash

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 Hot Suctions How are they protected By 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 Nov 1905 Is the screw shaft tunnel watertight Yes

Is it fitted with a watertight door Yes worked from Upper platform

BOILERS, &c.— (Letter for record B) Total Heating Surface of Boilers 3880 sq. ft. Is forced draft fitted No

No. and Description of Boilers Two: Cylindrical multi-tube simple ended Working Pressure 180 lbs Tested by hydraulic pressure to 360 lbs

Date of test 1/11/05 Can each boiler be worked separately Yes Area of fire grate in each boiler 57 sq. ft. No. and Description of safety valves to each boiler 2 Direct Spring

Area of each valve 5.94" 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 15" Mean dia. of boilers 14' 6" Length 10' 6" Material of shell plates Steel

Thickness 3/32" Range of tensile strength 28 to 32 tons Are they welded or flanged No Descrip. of riveting: cir. seams Lap double long seams R-Butt Straps

Diameter of rivet holes in long. seams 1 5/32" Pitch of rivets 9 1/4" Lap of plates or width of butt straps 18"

Per centages of strength of longitudinal joint rivets 92 Working pressure of shell by rules 181 lbs Size of manhole in shell 16" x 12"

Size of compensating ring 3 1/2" x 2 1/2" x 1 5/32" No. and Description of Furnaces in each boiler 3: Corrugated Material Steel Outside diameter 4 1/4"

Length of plain part top 1 1/2" bottom 1 1/2" Thickness of plates crown 9 bottom 7 1/2 Description of longitudinal joint Weld No. of strengthening rings None

Working pressure of furnace by the rules 186 lbs Combustion chamber plates: Material Steel Thickness: Sides 9/16" Back 5/8" Top 9/16" Bottom 13/16"

Pitch of stays to ditto: Sides 7 3/4" x 7 3/4" Back 9 1/4" x 8" Top 7 1/4" x 7 1/2" If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 181 lbs

Material of stays Steel Diameter at smallest part 1 1/8" x 1 1/2" Area supported by each stay 74" Working pressure by rules 192 lbs End plates in steam space:

Material Steel Thickness 1 3/32" Pitch of stays 20 1/2" x 19 1/2" How are stays secured Double nuts Working pressure by rules 180 lbs Material of stays Steel

Diameter at smallest part 2 1/4" Area supported by each stay 29 1/2" Working pressure by rules 191 lbs Material of Front plates at bottom Steel

Thickness 3/4" Material of Lower back plate Steel Thickness 13/16" Greatest pitch of stays 13 1/2" Working pressure of plate by rules 180 lbs

Diameter of tubes 5 1/2" Pitch of tubes 4 1/2" x 4 1/2" Material of tube plates Steel Thickness: Front 3/4" with Back 3/4" Mean pitch of stays 10.4"

Pitch across wide water spaces 14 1/2" Working pressures by rules 181 lbs Girders to Chamber tops: Material Steel Depth and thickness of girder at centre 9 1/4" x 1 1/2"

Length as per rule 34.6" Distance apart 7 1/2" Number and pitch of Stays in each 3: 7 3/4"

Working pressure by rules 182 lbs Superheater or Steam chest; how connected to boiler None Can the superheater be shut off and the boiler worked separately

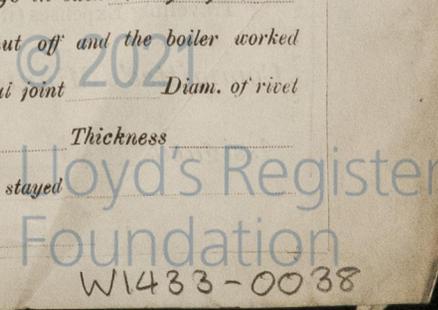
Diameter _____ Length _____ Thickness of shell plates _____ Material _____ Description of longitudinal joint _____ Diam. of rivet holes _____

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 _____

If used, state whether, and when, one will be sent. In a Report also sent on the Hull of the Ship.



W1433-0038

DONKEY BOILER— No. ✓ Description *See second sheet.*

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:— *Two main Bearing Bolts, 2 Crank pin Bolts, 2 Cross head Bolts, 1 set Coupling Bolts, 1 set Feed Hodge pump valves, 1 set piston springs, 1 Propeller, 1 piston valve, 10 main Boiler tubes, 6 Donkey Boiler tubes, 1 set Air pump valves, 1 Propeller shaft, Extra set Feed pump valves, Bolts nuts & iron assorted*

The foregoing is a correct description, **THE GLYDE SHIPBUILDING & ENGINEERING CO. LIMITED,**

Manufacturer. *John Brown* Director.

Dates of Survey while building

During progress of work in shops -	1905. July 25. 28. Aug. 2. 3. 4. 7. 10. 21. 29. 31. Sep. 4. 7. 12. 14. 19. 20. 22. 26. Oct. 2. 6. 10. 11.
	During erection on board vessel -
	16. 17. 20. 24. 26. 27. 31. Nov. 1. 8. 13. 14. 16. 21. 22. 26.

Total No. of visits *37.*

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 full power trials 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 11,05** marked in the Society's Register Book.*

It is submitted that this vessel is eligible for **THE BROOD L.M.C. 11.05 ELEC. LIGHT.**

W.S.
12.12.05

H.L.
13.12.05

The amount of Entry Fee.. £ 2 : : : When applied for, _____

Special £ 32 : 4 : : *6/12/05* *Wm. Austin*

Donkey Boiler Fee £ : : : When received, _____

Travelling Expenses (if any) £ : : : *9/12/05*

Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute *Glasgow 11 DEC 1905*

Assigned *+ L.M.C. 11, 05.* *Annual*

MACHINERY CERTIFICATE WRITTEN. *12/12/05*



Greenock

Certificate (if required) to be sent to

The Surveyors are requested not to write on or below the space for Committee's Minute.