

REPORT ON MACHINERY.

No. 28852

Received at London Office **WILL 11 MAY 1910**

Date of writing Report **10** When handed in at Local Office **30/4/10** Port of **Glasgow**

No. in Survey held at **Glasgow** Date, First Survey **26th Nov 1909** Last Survey **28th April 1910**

Reg. Book. **59** Subj. on the **s/s "PRIMROSE."** (Number of Visits **25**)

Master **Taisley** Built at **Taisley** By whom built **J. Fullerton (No. 215)** Tons { Gross **611.44** Net **256.08**

Engines made at **Glasgow** By whom made **Ross + Duncan (No. 825)** When built **1910.**

Boilers made at **do.** By whom made **do (No. 1281)** when made **1910.**

Registered Horse Power **107** Owners **Richard Hughes + Co.** Port belonging to **Liverpool.**

Nom. Horse Power as per Section 28 **107** Is Refrigerating Machinery fitted for cargo purposes **No.** Is Electric Light fitted **No.**

ENGINES, &c.—Description of Engines **Triple expansion, surface condensing** No. of Cylinders **3** No. of Cranks **3**

Dia. of Cylinders **14"-24"-40"** Length of Stroke **27"** Revs. per minute **95** Dia. of Screw shaft **8 1/4"** Material of **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 **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 **yes** If two liners are fitted, is the shaft lapped or protected between the liners **yes** Length of stern bush **2'-9"**

Dia. of Tunnel shaft **7 1/8"** Dia. of Crank shaft journals **7 1/8"** Dia. of Crank pin **7 1/8"** Size of Crank webs **14 1/2" x 5"** Dia. of thrust shaft under collars **7 1/8"** Dia. of screw **10'-0"** Pitch of Screw **11'-9"** No. of Blades **4** State whether moveable **no** Total surface **39 sq ft**

No. of Feed pumps **2** Diameter of ditto **2 1/2"** Stroke **13 1/2"** Can one be overhauled while the other is at work **yes**

No. of Bilge pumps **2** Diameter of ditto **2 3/4"** Stroke **13 1/2"** Can one be overhauled while the other is at work **yes**

No. of Donkey Engines **2** Sizes of Pumps **5 1/4" x 3 1/2" x 5" duplex feed** No. and size of Suctions connected to both Bilge and Donkey pumps **In Engine Room 1-2 1/4", 1-2" + 1-2" special do ballast In Holds, &c. 2-2"**

No. of Bilge Injections **1** sizes **3 1/4"** Connected to condenser, or to circulating pump **pump** Is a separate Donkey Suction fitted in Engine room & size **yes 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 **none**

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 **Tank + hold bilge pipes** How are they protected **2 1/2" wood casing**

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**

Dates of examination of completion of fitting of Sea Connections **and** of Stern Tube **and** Screw shaft and Propeller **30.3.10.**

Is the Screw Shaft Tunnel watertight **none** Is it fitted with a watertight door **yes** worked from **yes**

BOILERS, &c.—(Letter for record **\$**) Manufacturers of Steel **Colville + Lanarkshire Steel Co.**

Total Heating Surface of Boilers **1899.5 sq ft** Is Forced Draft fitted **no** No. and Description of Boilers **1 single ended marine**

Working Pressure **180 lb.** Tested by hydraulic pressure to **310 lb.** Date of test **16.3.10.** No. of Certificate **10322.**

Can each boiler be worked separately **yes** Area of fire grate in each boiler **54.5 sq ft** No. and Description of Safety Valves to each boiler **1 double spring loaded** Area of each valve **5.41 sq in** Pressure to which they are adjusted **185 lb.** Are they fitted with easing gear **yes**

Smallest distance between boilers or uptakes and bunkers or woodwork **4'-0"** Inside Mean dia. of boilers **14'-0"** Length **10'-6"** Material of shell plates **steel**

Thickness **1 1/32"** Range of tensile strength **28/32 tons** Are the shell plates welded or flanged **no** Descrip. of riveting: cir. seams **O.K.**

long. seams **T.R.D.B.S.** Diameter of rivet holes in long. seams **1 3/16"** Pitch of rivets **8"** Lap of plates or width of butt straps **17 1/2"**

Per centages of strength of longitudinal joint rivets **89.3%** Working pressure of shell by rules **184 lb.** Size of manhole in shell **16" x 12"**

Size of compensating ring **7" x 1 1/32"** No. and Description of Furnaces in each boiler **3 plain** Material **steel** Outside diameter **3'-5"**

Length of plain part **top 3'-5" bottom 3'-5"** Thickness of plates **top 3 1/4" bottom 3 1/4"** Description of longitudinal joint **welded** No. of strengthening rings **one**

Working pressure of furnace by the rules **180 lb.** Combustion chamber plates: Material **steel** Thickness: Sides **19/32"** Back **19/32"** Top **19/32"** Bottom **1 1/16"**

Pitch of stays to ditto: Sides **8 1/4" x 7 1/2"** Back **8 1/4" x 7 1/2"** Top **8" x 8"** If stays are fitted with nuts or riveted heads **nuts** Working pressure by rules **190 lb.**

Material of stays **steel** Diameter at smallest part **1.48"** Area supported by each stay **6.24 sq in** Working pressure by rules **185 lb.** End plates in steam space: Material **steel** Thickness **1 1/32"** Pitch of stays **19 1/2" x 17 1/2"** How are stays secured **on wash** Working pressure by rules **184 lb.** Material of stays **steel**

Diameter at smallest part **6.28"** Area supported by each stay **34.3 sq in** Working pressure by rules **187 lb.** Material of Front plates at bottom **steel**

Thickness **13/16"** Material of Lower back plate **steel** Thickness **3/4"** Greatest pitch of stays **13 3/4"** Working pressure of plate by rules **183 lb.**

Diameter of tubes **3 1/2"** Pitch of tubes **4 3/4" x 4 1/16"** Material of tube plates **steel** Thickness: Front **13/16"** Back **13/16"** Mean pitch of stays **14 1/16" x 9 1/2"**

Pitch across wide water spaces **14"** Working pressures by rules **231 lb.** Girders to Chamber tops: Material **iron** Depth and thickness of girder at centre **7" x 2 1/4"** Length as per rule **2'-6 3/32"** Distance apart **8"** Number and pitch of stays in each **3 @ 8"**

Working pressure by rules **186 lb.** Superheater or Steam chest; how connected to boiler **none** Can the superheater be shut off and the boiler worked separately **yes**

Diameter **yes** Length **yes** Thickness of shell plates **yes** Material **yes** Description of longitudinal joint **yes** Diam. of rivet holes **yes** Pitch of rivets **yes** Working pressure of shell by rules **yes** Diameter of flue **yes** Material of flue plates **yes** Thickness **yes**

If stiffened with rings **yes** Distance between rings **yes** Working pressure by rules **yes** End plates: Thickness **yes** How stayed **yes**

Working pressure of end plates **yes** Area of safety valves to superheater **yes** Are they fitted with easing gear **yes**

VERTICAL DONKEY BOILER—

Manufacturers of Steel

No. _____ Description _____
 Made at _____ By whom made _____ When made _____ Where fixed _____
 Working pressure _____ tested by hydraulic pressure to _____ Date of test _____ No. of Certificate _____ Fire grate area _____ Description of Safety
 Valves _____ No. of Safety Valves _____ Area of each _____ Pressure to which they are adjusted _____ Date of adjustment _____
 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 _____
 Working pressure of shell by rules _____ 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 _____
 Working pressure of furnace by rules _____ Thickness of furnace crown plates _____ Stayed by _____
 Diameter of uptake _____ Thickness of uptake plates _____ Thickness of water tubes _____ Dates of survey _____

SPARE GEAR. State the articles supplied:— *Two connecting rod top end + 2 bottom end bolts + nuts, 2 main bearing bolts, 1 set coupling bolts, 1 set of feed + bilge pump valves, 1 set of piston springs, a quantity of assorted bolts + nuts, iron of various sizes, 6 boiler + 6 condenser tubes.*

The foregoing is a correct description,

Ross & Duncan Manufacturer.

Dates of Survey while building { During progress of work in shops - - 1909. Nov 20. 23. 30. Dec 3. 9. 18. 23. 29. 1910. Jan 12. 22. 31. Feb 9. 16.
 { During erection on board vessel - - 24. March 2. 16. 21. 30. April 14. 18. 22. 26. 28.
 Total No. of visits 23

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

Dates of Examination of principal parts—Cylinders 12.1.10. Slides 9.2.10. Covers 9.2.10. Pistons 31.1.10. Rods 31.1.10.
 Connecting rods 31.1.10. Crank shaft 29.12.09 Thrust shaft 21.3.10 Tunnel shafts *None* Screw shaft 21.3.10. Propeller 21.3.10.
 Stern tube 21.3.10. Steam pipes tested 18.4.10 Engine and boiler seatings 30.3.10. Engines holding down bolts 26.4.10.
 Completion of pumping arrangements 26.4.10. Boilers fixed 26.4.10. Engines tried under steam 28.4.10.
 Main boiler safety valves adjusted 22.4.10. Thickness of adjusting washers *Port = 3/8" Starboard 3/8" full.*
 Material of Crank shaft *Iron* Identification Mark on Do. 2502 Material of Thrust shaft *Iron* Identification Mark on Do. 3524.
 Material of Tunnel shafts *None* Identification Marks on Do. *✓* Material of Screw shafts *Iron* Identification Marks on Do. 3524.
 Material of Steam Pipes *Copper* Test pressure 360 lbs.

General Remarks (State quality of workmanship, opinions as to class, &c. *The workmanship + materials are good. The machinery has been built under special survey, fitted on board, & satisfactorily tried under steam, & in my opinion is eligible for the notation + L.M.C. 4.10.*

It is submitted that this vessel is eligible for THE RECORD. + L.M.C. 4.10.

The amount of Entry Fee.. £ 2 : - : When applied for, 5/5/10.
 Special .. £ 16 : 1 :
 Donkey Boiler Fee .. £ : :
 Travelling Expenses (if any) £ : : When received, 7/5/10.

Committee's Minute

GLASGOW

11 MAY 1910

Assigned + L.M.C. 4.10.

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



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