

Date of writing Report 19 When handed in at Local Office 20/12/1911 Port of Greenock.  
No. in Survey held at Port Glasgow. Date, First Survey 23<sup>rd</sup> Dec. 1910 Last Survey 16<sup>th</sup> Dec. 1911  
Reg. Book. (Number of Visits 100.)  
on the SCREW STEAMER MONTORO.

Master Built at Port Glasgow By whom built Clyde S.S. Eng. Co. Ltd. When built 1911.  
Engines made at Port Glasgow By whom made Clyde S.S. Eng. Co. Ltd. when made 1911.  
Boilers made at Port Glasgow By whom made Clyde S.S. Eng. Co. Ltd. when made 1911.  
Registered Horse Power Owners Burns, Philp & Co. Ltd. Port belonging to Sydney.  
Nom. Horse Power as per Section 28 661. Is Refrigerating Machinery fitted for cargo purposes Yes. Is Electric Light fitted Yes.

ENGINES, &c.—Description of Engines Triple Expansion. No. of Cylinders Three No. of Cranks Three.  
Dia. of Cylinders 27" 43" 72" Length of Stroke 48" Revs. per minute 82. Dia. of Screw shaft as per rule 14.65" 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 One length. 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 7' 2 1/4".  
Dia. of Tunnel shaft as per rule 13.34" Dia. of Crank shaft journals as per rule 13.93" Dia. of Crank pin 14" Size of Crank webs 9 1/2" x 20" Dia. of thrust shaft under collars 14 1/2". Dia. of screw 14" 6". Pitch of Screw 14" 0". No. of Blades 4 State whether moveable Yes. Total surface 92 Sq. ft.  
No. of Feed pumps 2 Diameter of ditto 4 1/2" Stroke 24" Can one be overhauled while the other is at work Yes. MAIN FEED PUMPS. 2 12" x 9" x 21".  
No. of Bilge pumps 2 Diameter of ditto 4" Stroke 24" Can one be overhauled while the other is at work Yes. Woodson's.  
No. of Donkey Engines Five Sizes of Pumps 4 1/2" x 3 1/2" x 6", 6" x 4" x 8", 8" x 6" x 8", 9" x 8" x 10", 10" x 8" x 12". Grand size of Suctions connected to both Bilge and Donkey pumps In Engine Room Four 3 1/2" dia. In Holds, &c. No. 1 HOLD. Two 3 1/2" dia. No. 2 HOLD. Two 3 1/2" dia. No. 3 HOLD. Two 3 1/2" dia. No. 4 HOLD. One 3 1/2" dia. TUNNEL WELL. One 2 1/2" dia.  
No. of Bilge Injections 1 sizes 9" Connected to condenser, or to circulating pump C.P. Is a separate Donkey Suction fitted in Engine room & size Yes. 2-3 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 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 Hold Suctions. How are they protected Cased in.  
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 17/10/11 of Stern Tube 17/10/11. Screw shaft and Propeller 1/11/11.  
Is the Screw Shaft Tunnel watertight Yes. Is it fitted with a watertight door Yes. worked from upper platform.

BOILERS, &c.—(Letter for record S(R) Manufacturers of Steel Steel Co. of Scotland.  
Total Heating Surface of Boilers 11156 Is Forced Draft fitted Yes. No. and Description of Boilers Four Single Cylinder Horizontal.  
Working Pressure 180 lbs. Tested by hydraulic pressure to 360 lbs. Date of test 10/5/11 12/6/11 No. of Certificate 1006 & 1012.  
Can each boiler be worked separately Yes. Area of fire grate in each boiler 63 Sq. ft. No. and Description of Safety Valves to each boiler 2: Direct Spring Area of each valve 9.62" 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 8". Mean dia. of boilers 15' 9" Length 11' 6" Material of shell plates Steel.  
Thickness 1 1/8" Range of tensile strength 28 to 32 tons Are the shell plates welded or flanged No. Descrip. of riveting: cir. seams Lap Double long. seams Double Butt Strap Diameter of rivet holes in long. seams 1 1/2". Pitch of rivets 10 1/4", 5" 8". Top of plates or width of butt straps 22".  
Per centages of strength of longitudinal joint rivets 89.2 plate 85.3 Working pressure of shell by rules 208 lbs. Size of manhole in shell 17" x 13".  
Size of compensating ring Flanged Ring No. and Description of Furnaces in each boiler 3: Dightons. Material Steel Outside diameter 50 1/4".  
Length of plain part top 4' 6" Thickness of plates crown 5" 8" Description of longitudinal joint Weld. No. of strengthening rings None.  
Working pressure of furnace by the rules 200 lbs. Combustion chamber plates: Material Steel Thickness: Sides 5" 8" Back 5" 8" Top 5" 8" Bottom 15" 16".  
Pitch of stays to ditto: Sides 8" x 8 1/4" Back 8 1/4" x 8 1/4" Top 8" x 8 1/4" If stays are fitted with nuts or riveted heads Nuts. Working pressure by rules 193 lbs.  
Material of stays Sp. Iron Diameter at smallest part 1 1/8" Area supported by each stay 40" Working pressure by rules 262 lbs. End plates in steam space: Material Steel Thickness 1 3/8" Pitch of stays 16" x 16 1/4" How are stays secured Double Nuts. Working pressure by rules 183 lbs. Material of stays Steel.  
Diameter at smallest part 2 3/8" Area supported by each stay 260" Working pressure by rules 211 lbs. Material of Front plates at bottom Steel.  
Thickness 1 5/8" Material of Lower back plate Steel Thickness 3/4" Greatest pitch of stays 13 1/2" Working pressure of plate by rules 196 lbs.  
Diameter of tubes 2 1/2" Pitch of tubes 3 3/4" x 3 3/4" Material of tube plates Steel Thickness: Front 1 3/4" x 1 5/8" Back 3/4" Mean pitch of stays 4 1/2".  
Pitch across wide water spaces 13 1/2" Working pressures by rules 208 lbs. 358 lbs. Girders to Chamber tops: Material Steel. Depth and thickness of girder at centre 9 1/2" x 1 1/2". Length as per rule 33.6". Distance apart 8 1/2". Number and pitch of stays in each 3" 8".  
Working pressure by rules 192 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



4 16163.

**VERTICAL DONKEY BOILER—**

Manufacturers of Steel

No. *None* 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 Plates

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 Radius of do. Stayed by

Diameter of uptake Thickness of uptake plates Thickness of water tubes Dates of survey

**SPARE GEAR.** State the articles supplied:— 2 Eccentric Straps, Air Pump Rod & Head valve grating 1 set Both. End Bolts & Bushes. 1 set Top End Bolts & Bushes. 1 set Coupling Bolts, 1 Propeller shaft, 3 Propeller Blade studs, 1 set spare gear for Fan Engine. 1 set H.P. Piston valve Rings, 1 set L.P. Piston valve Rings 1 set Springs for each side of Piston. 1 Centrifugal Pump Shaft & Impeller. 4 C.I. Propeller Blades. 1 set of Coupling. 4 8 C.I. Centre Raising Cover Studs. 1 set of Key Bolts 2 Eccentric Rod Studs. 7 Eccentric Rod Bolts. 100 Bondman tubs of 1 1/2 inch dia. 20 studs for Condenser doors. 1 set each air pump valve also Relp. Feed Sanitary. 1 set valves for all air pumps. 1 set valves for Woodson's pumps. 1 set valves for do. 3 S. valve springs. 1 set valve spring. 36 pump tubes 12 stay tubes. 100 Bolt nuts etc. etc.

The foregoing is a correct description,

**THE OLIVE SHIPBUILDING & ENGINEERING CO. LIMITED.**

Manufacturer.

Dates of Survey while building

During progress of work in shops — 1910. Dec. 23-28-29. 29. 29. 31. Apr. 4. 6. 11. 13. 14. 15. 15. 20. 25. 28. May. 1-3. 8. 10. 13. 25. June. 2. 6. 4. 12. 13. 16. 20. 24. 28. 29. 30. July. 18. 21. Aug. 3. 9. 14. 21. 28.

During erection on board vessel — 1911. 1. 4. 5. 6. 12. 15. 18. 20. 21. Oct. 3. 5. 10. 13. 15. 21. 25. 27. Nov. 1. 6. 8. 9. 10. 18. 20. 22. 28. 30. Dec. 7. 8. 11. 12. 13. 14. 15. 16.

Total No. of visits 100.

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

" " " donkey " " " *Yes*.

**Dates of Examination of principal parts—** Cylinders 13/6/11 Slides 12/9/11. Covers 16/12/11 Pistons 21/2/11 Rods 15/9/11

Connecting rods 14/9/11 Crank shaft 21/8/11 Thrust shaft 21/8/11 Tunnel shafts 4/9/11 Screw shaft 4/9/11 Propeller 12/9/11

Stern tube 15/9/11 Steam pipes tested 21/10/11. 21/11/11. 21/11/11 Engine and boiler seatings 17/10/11. Engines holding down bolts 10/11/11.

Completion of pumping arrangements 10/11/11. Boilers fixed 13/12/11. Engines tried under steam 16/12/11

Main boiler safety valves adjusted 13/12/11. Thickness of adjusting washers *S.F. 1/2" S.V. 1/2" S.A. 1/2" S.V. 1/2" P.F. 1/2" S.V. 1/2" R.A. 1/2" S.V. 1/2"*

Material of Crank shaft *Steel* Identification Mark on Do. 1024 Material of Thrust shaft *Steel* Identification Mark on Do. 1025

Material of Tunnel shafts *Steel* Identification Marks on Do. 1026 *R.A.* Material of Screw shafts *Steel* Identification Marks on Do. 1024

Material of Steam Pipes *Copper* Test pressure 400 lb. *Yes*

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

The Engines & Boilers of this vessel were built under special survey and the materials and workmanship are good. On completion the machinery was tested on a full power trial and found to work satisfactorily. It is now in good and efficient condition throughout and eligible in my opinion to have the record of **LMC 12.11.** marked in the Society's Register Book.

It is submitted that this vessel is eligible for THE RECORD + LMC 12.11

F.D.

J.W.D.

ARSL

The amount of Entry Fee .. £ 3 : : When applied for, 20/12/11-1911.

Special .. £ 53 : : When received, 30.12.11

Donkey Boiler Fee .. £ : : 1911

Travelling Expenses (if any) £ : : 1911

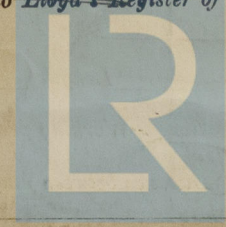
Committee's Minute

GLASGOW 27 DEC. 1911

Assigned + LMC 12.11

MACHINERY CERTIFICATE WRITTEN 27/12/11

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



Lloyd's Register Foundation

Greenock

Certificate (if required) to be sent to

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

25/12/11