

REPORT ON MACHINERY.

No. 16606

WED. FEB. 18. 1914

Received at London Office

Date of writing Report 10 When handed in at Local Office 14/2/14. Port of Greenock

No. in Survey held at Greenock. Date, First Survey 25th Feby 1913. Last Survey 12th Feby 1914. (Number of Visits 54.)

on the SCREW STEAMER "ARDGARRY."

Tons } Gross 4526.50
Net 2893.22
When built 1914

Master Pearson. Built at Port Glasgow. By whom built Russell & Co.

Engines made at Greenock. By whom made Rankin & Blackmore. when made 1914.

Boilers made at Greenock. By whom made Rankin & Blackmore. when made 1914.

Registered Horse Power Owners Port belonging to Greenock

Nom. Horse Power as per Section 28 361. Is Refrigerating Machinery fitted for cargo purposes No. Is Electric Light fitted Yes.

ENGINES, &c.—Description of Engines *Multi Expansion* No. of Cylinders *Three* No. of Cranks *Three*

Dia. of Cylinders 25"-41"-69". Length of Stroke 48". Revs. per minute 70. Dia. of Screw shaft as per rule 14.5" 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. If two liners are fitted, is the shaft lapped or protected between the liners. Length of stern bush 59"

Dia. of Tunnel shaft as per rule 12.49" Dia. of Crank shaft journals as per rule 13.3" Dia. of Crank pin 13.29" Size of Crank webs 19" x 8.25" Dia. of thrust shaft under collars 13.38" Dia. of screw 17.6" Pitch of Screw 17.6" No. of Blades 4. State whether moceable No. Total surface 96.59 sq. ft.

No. of Feed pumps 2 Diameter of ditto 3.5" Stroke 24" Can one be overhauled while the other is at work Yes. No. of Bilge pumps 2 Diameter of ditto 4" Stroke 24" Can one be overhauled while the other is at work Yes.

No. of Donkey Engines Two. Sizes of Pumps 8" x 5" x 8", 9" x 11.25" x 12". No. and size of Suctions connected to both Bilge and Donkey pumps In Engine Room Three - 3.2" dia. In Holds, &c. No. 1 HOLD. 2-3.2" dia. No. 2 HOLD. 2-3.2" dia.

No. 3 HOLD. (DEEP TANK) 2-3.2" dia. x 2-6" dia. No. 4 HOLD. 2-3.2" dia. TUNNEL WELL. 1-2.25" dia.

No. of Bilge Injections 1 sizes 5.25" Connected to condenser, or to circulating pump C.P. Is a separate Donkey Suction fitted in Engine room & size Yes. 2.25"

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 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.

Dates of examination of completion of fitting of Sea Connections 22/12/13 of Stern Tube 22/12/13 Screw shaft and Propeller 22/12/13

Is the Screw Shaft Tunnel watertight Yes. Is it fitted with a watertight door Yes. worked from upper platform.

BOILERS, &c.—(Letter for record *Steel*) Manufacturers of Steel *Steel Co. of Scotland L.*

Total Heating Surface of Boilers 5751 sq. ft. Is Forced Draft fitted No. No. and Description of Boilers 3 Cylinders Multi Single

Working Pressure 180 lbs. Tested by hydraulic pressure to 360 lbs. Date of test 11/12/13 No. of Certificate 1154

Can each boiler be worked separately Yes. Area of fire grate in each boiler 59 sq. ft. No. and Description of Safety Valves to each boiler 2 Direct Spring Area of each valve 7.06 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 20" Mean dia. of boilers 14.6" Length 11.0" Material of shell plates Steel

Thickness 1.8" Range of tensile strength 29-32 tons Are the shell plates welded or flanged No. Descrip. of riveting: cir. seams Lap Double

long. seams Butt Strap Diameter of rivet holes in long. seams 1.52" Pitch of rivets 8.46" 4.32" Lap of plates or width of butt straps 18.4"

Per centages of strength of longitudinal joint rivets 88.7 plate 86. Working pressure of shell by rules 180 lbs. Size of manhole in shell 16" x 12"

Size of compensating ring Plate flanged No. and Description of Furnaces in each boiler 3 Furnaces Material Steel Outside diameter 46.25"

Length of plain part top 7.02" bottom 7.02" Thickness of plates crown 2.35" bottom 2.4" Description of longitudinal joint Weld. No. of strengthening rings None.

Working pressure of furnace by the rules 184 lbs. Combustion chamber plates: Material Steel Thickness: Sides 5.8" Back 5.8" Top 5.8" Bottom 5.2"

Pitch of stays to ditto: Sides 9.4" x 8" Back 9.4" x 8" Top 7.5" x 9.2" If stays are fitted with nuts or riveted heads Auto. Working pressure by rules 181 lbs.

Material of stays Steel Diameter at smallest part 1.2" Area supported by each stay 74 sq. in. Working pressure by rules 191 lbs. End plates in steam space:

Material Steel Thickness 1.76" Pitch of stays 20.25" x 20" How are stays secured Double nuts. Working pressure by rules 186 lbs. Material of stays Steel

Diameter at smallest part 3.32" Area supported by each stay 416 sq. in. Working pressure by rules 180 lbs. Material of Front plates at bottom Steel

Thickness 1.3" Material of Lower back plate Steel Thickness 2.52" Greatest pitch of stays 13" Working pressure of plate by rules 181 lbs.

Diameter of tubes 3.4" Pitch of tubes 4.5" x 4.8" Material of tube plates Steel Thickness: Front 11.5" Back 9.5" Mean pitch of stays 9"

Pitch across wide water spaces 13.2" Working pressures by rules 224 lbs. 248 lbs. Girders to Chamber tops: Material Steel. Depth and thickness of girder at centre 8.8" x 10.4" x 1.2". Length as per rule 32.6". Distance apart 9.2". Number and pitch of stays in each 3: 4.58"

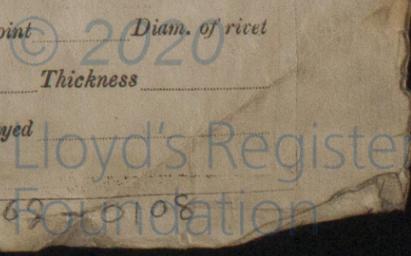
Working pressure by rules 183 lbs. Superheater or Steam chest; how connected to boiler None. Can the superheater be shut off and the boiler worked separately

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?



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:— *1 Propeller & shaft, 3 Cylinder escape valves & pump, 12 Shaft Coupling Bolts, 2 Conn Rod Bolts, 2 Piston Rod Bolts, 2 Main Bearing Bolts, 6 Holding down Bolts, 6 Pump Ring Bolts, 6 Cylinder Cover Studs, 1 Valve Chest Cover Stud, 2 Feed Pump valves, 2 Bilge Pump valves, 1 Cent. Pump valves, 1 set Circumf. Pump valves, 1 set Feedcheck valves, 1 Feed escape valve & spring, 12 Boiler Tubes, 12 Condenser tubes, 3 Safety valve springs & set screws, 20 Lamp frames, Bolts nuts assorted & iron of various sizes.*

The foregoing is a correct description,

Ramsey Mackenzie
 Manufacturer.

1913 Feb 25. Mar 4. Apr 10. 14. 21. 23. May 16. June 3. 5. 24. Aug. 8. 18. 25. Sept. 1. 4. 16. 19. 23.
 Dates of Survey while building: During progress of work in shops -- Oct 2. 7. 14. 17. 20. 23. 28. 29. 31. Nov. 4. 7. 11. 13. 18. 24. 26. Dec. 2. 9. 11. 16. 18. 22. 30. 31. 1914 Jan 9. 12. 15. 16. 19.
 During erection on board vessel -- Oct 20. 24. 29. 30. Feb 4. 10. 12.
 Total No. of visits *54* Is the approved plan of main boiler forwarded herewith *Yes* ✓
 " " " donkey " " " ✓

Dates of Examination of principal parts—Cylinders *2/10/13* Slides *7/10/13* Covers *12/12/14* Pistons *2/12/13* Rods *2/12/13*
 Connecting rods *20/10/13* Crank shaft *6/13* Thrust shaft *23/10/13* Tunnel shafts *18/12/13* Screw shaft *18/12/13* Propeller *9/12/13*
 Stern tube *7/11/13* Steam pipes tested *18.19.21/1/14* Engine and boiler seatings *19/1/14* Engines holding down bolts *19/1/14*
 Completion of pumping arrangements *4/2/14* Boilers fixed *4/2/14* Engines tried under steam *12/2/14*
 Main boiler safety valves adjusted *4/2/14* Thickness of adjusting washers S.B. *1/25/14* C.B. *1/4.5/14* P.B. *1/7.5/14*
 Material of Crank shaft *Steel* Identification Mark on Do. *1243* Material of Thrust shaft *Steel* Identification Mark on Do. *1244*
 Material of Tunnel shafts *Steel* Identification Marks on Do. *1245* Material of Screw shafts *Steel* Identification Marks on Do. *1246*
 Material of Steam Pipes *Wrought iron* Test pressure *540 lbs* ✓

General Remarks (State quality of workmanship, opinions as to class, &c.)
*The Engines and Boilers of this vessel were built under Special Survey and the materials and workmanship are good. When completed they were examined under steam 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.2.14. marked in the Society's Register Book.*

It is submitted that this vessel is eligible for THE RECORD. + LMC 2.14.

J.W.D. J.P.R.
 19/07/14

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

The amount of Entry Fee .. £ 3 : . :	When applied for.
Special £ 38 . 1 :	14/2/1914
Donkey Boiler Fee £ - : . :	When received,
Travelling Expenses (if any) £ - : . :	17/2/1914

Committee's Minute **GLASGOW** 17 FEB. 1914
 Assigned + LMC 2.14

FRI. 17 JAN 1930



GREENOCK
 Certificate (if required) to be sent to
 (The Surveyor and Registrar) not to write on or below the space for Committee's Minute.)