

## REPORT ON MACHINERY.

No. 15717

Received at London Office

WED. 16 FEB 1910

Date of writing Report

10

When handed in at Local Office

10/21 1910. Port of Greenock.

No. in Survey held at Greenock.  
Reg. Book.

Date, First Survey 19th April 1909. Last Survey 7th Feby 1910.

(Number of Visits 76)

on the SCREW STEAMER VALDURA.

Tons { Gross 5507.  
Net 3495.  
When built 1910

Master A. G. McQuillan. Built at Port Glasgow By whom built Russell &amp; Co.

Engines made at Greenock. By whom made Rankin &amp; Blackmore. when made 1910

Boilers made at Greenock. By whom made Rankin &amp; Blackmore. when made 1910.

Registered Horse Power

Owners The Valdura S.S. Co. Ltd.

Port belonging to Glasgow

Nom. Horse Power as per Section 28 538

Is Refrigerating Machinery fitted for cargo purposes No.

Is Electric Light fitted Yes.

## ENGINES, &amp;c.—Description of Engines Triple Expansion.

No. of Cylinders Three / No. of Cranks Three

Dia. of Cylinders 27-45-74 Length of Stroke 51 Revs. per minute 72 Dia. of Screw shaft as per rule 15.27 as fitted 16.27 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 the length of 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 66"

Dia. of Tunnel shaft as per rule 13.67 as fitted 14.5 Dia. of Crank shaft journals as per rule 14.35 as fitted 14.8 Dia. of Crank pin 14.8 Size of Crank webs 9 1/2 x 22 Dia. of thrust shaft under collars 14 1/2 Dia. of screw 15.6 Pitch of Screw 18.0 No. of Blades 4 State whether moveable No. Total surface 114 sq. ft.

No. of Feed pumps 2 Diameter of ditto 4 1/2 Stroke 25 Can one be overhauled while the other is at work Yes. Main Man. Feed Pump.

No. of Bilge pumps 2 Diameter of ditto 4 1/2 Stroke 25 Can one be overhauled while the other is at work Yes.

No. of Donkey Engines Three Sizes of Pumps FEED, DRY, BALLAST, (4 1/2 x 3) (4 1/2 x 6) (9 x 12 x 12) No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room Three - 3 1/2 dia. In Holds, &amp;c. No. 1 Hold: Two 3 1/2 dia. No. 2 Hold: Two 3 1/2 dia. No. 3

No. of Bilge Injections 1 sizes 8 1/2 Connected to condenser, or to circulating pump C.P. Is a separate Donkey Suction fitted in Engine room &amp; 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

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 None 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 8/12/09 of Stern Tube 1/12/09. Screw shaft and Propeller 8/12/09.

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

## BOILERS, &amp;c.—(Letter for record X X X)

Manufacturers of Steel The Glasgow Iron Works Co. Ltd. 60th &amp; 61st St. Glasgow.

Total Heating Surface of Boilers 7890 sq. ft. Is Forced Draft fitted Yes. No. and Description of Boilers 3: Cylindrical, Single End.

Working Pressure 180 lbs Tested by hydraulic pressure to 360 lbs Date of test 7/12/09. No. of Certificate 951.

Can each boiler be worked separately Yes. Area of fire grate in each boiler 544 sq. ft. No. and Description of Safety Valves to

each boiler 2: Direct Spring loaded. Area of each valve 11.04 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 24 in. Mean dia. of boilers 15.3. Length 11.9. Material of shell plates Steel

Thickness 1 1/2 in. Range of tensile strength 29400 lbs. Are the shell plates welded or flanged No. Descrip. of riveting: cir. seams Lap Double

long. seams 20 Shapes. Diameter of rivet holes in long. seams 1 1/4 in. Pitch of rivets 8 1/2 in. 4 1/2 in. Lap of plates on width of butt straps 1.6 1/2 in.

Per centages of strength of longitudinal joint rivets 86.5 plate 85.9 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: Dighton Material Steel Outside diameter 50 1/4 in.

Length of plain part top 3 1/2 in. Thickness of plates crown 19 in. 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 in. Back 5 in. Top 3 1/2 in. Bottom 1 1/2 in.

Pitch of stays to ditto: Sides 8 x 9 in. Back 8 1/2 x 8 1/2 in. Top 11 x 8 in. If stays are fitted with nuts or riveted heads Auto. Working pressure by rules 188 lbs.

Material of stays Iron Diameter at smallest part 1 1/8 in. Area supported by each stay 88 sq. in. Working pressure by rules 214 lbs. End plates in steam space:

Material Steel Thickness 1 1/2 in. Pitch of stays 16 1/2 x 14 1/2 in. How are stays secured 2: Washers Working pressure by rules 192 lbs. Material of stays Steel.

Diameter at smallest part 3 in. Area supported by each stay 294 sq. in. Working pressure by rules 256 lbs. Material of Front plates at bottom Steel.

Thickness 1 1/2 in. Material of Lower back plate Steel. Thickness 5/8 in. Greatest pitch of stays 12 1/2 in. Working pressure of plate by rules 208 lbs.

Diameter of tubes 2 1/2 in. Pitch of tubes 3 1/2 x 3 1/2 in. Material of tube plates Steel. Thickness: Front 13/16 in. Back 3/4 in. Mean pitch of stays 7.34 in.

Pitch across wide water spaces 13 1/4 in. Working pressures by rules 214 lbs. 273 lbs. Girders to Chamber tops: Material Steel. Depth and

thickness of girder at centre 11 x 15 in. Length as per rule 34 1/8 in. Distance apart 11 in. Number and pitch of stays in each 3: 8 in.

Working pressure by rules 195 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

1137-0035



# 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 \_\_\_\_\_ 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 \_\_\_\_\_ Stayed by \_\_\_\_\_

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

SPARE GEAR. State the articles supplied:— One Propeller and Shaft, 1 Eccentric Rod, 2 Main Bearing Bolts, 2 Ground Pin Bolts, 2 Crosshead Bolts, 1 Set Coupling Bolts, 1 Set Each fixed & Belge pump valves & seats, 2 main fixed check valves, 2 D.P. feed check valves, 2 D.P. check valves, 1 Engol White Metal, 12 Piston Bolts & Brass nuts, 1 Set Piston Springs for 4 P. & S. Pistons, 1 Cylinder Escape valve & spring, 1 Holding down Bolt, 6 Cyld. Cover Bolts, 1 Feed Pump escape valve & spring, 1 Set Daph. valve springs, 12 main Boiler tubes, 6 Donkey Boiler tubes, 24 Condenser tubes, 1 Set Bottom End Bushes, 1 Set Air pump valves, 130 lbs. nuts & bon of various sizes.

The foregoing is a correct description, \_\_\_\_\_

*Random Blackmore* Manufacturer.

Dates of Survey \_\_\_\_\_

During progress of work in shops— 1909 Apr. 12. May. 4. 7. 10. 17. 18. 24. 26. 31. June 4. 7. 10. 14. 21. 25. 30. July 13. 24. 27. Aug. 2. 4. 9. 11. 17. 20. 25.

During erection on board vessel— 31. Sept. 6. 7. 9. 15. 17. 21. 27. 30. Oct. 6. 11. 15. 18. 22. 26. 28. 29. Nov. 1. 2. 6. 8. 9. 10. 15. 18. 22. 25. 29. Dec. 1. 2. 6. 7. 8. 9. 11.

Total No. of visits 76.

Is the approved plan of main boiler forwarded herewith \_\_\_\_\_

Dates of Examination of principal parts—Cylinders 6/12/09. Slides 29/11/09. Covers 4/12/09. Pistons 6/12/09. Rods 22/10/09.

Connecting rods 22/10/09. Crank shaft 6/12/09. Thrust shaft 11/11/09. Tunnel shafts 25/11/09. Screw shaft 25/11/09. Propeller 25/11/09.

Stern tube 1/11/09. Steam pipes tested 20/1/10. Engine and boiler seatings 1/12/09. Engines holding down bolts 10/1/10.

Completion of pumping arrangements 27/1/10. Boilers fixed 10/1/10. Engines tried under steam 7/12/10.

Main boiler safety valves adjusted 26/1/10. Thickness of adjusting washers \_\_\_\_\_

Material of Crank shaft Steel Identification Mark on Do. 510. Material of Thrust shaft Steel Identification Mark on Do. 919.

Material of Tunnel shafts Steel Identification Marks on Do. 921, 922, 923. Material of Screw shafts Steel Identification Marks on Do. 920.

Material of Steam Pipes Wrot. Iron. By Stewart & Lloyd. Test pressure Stamped CHIP 540 lb. sq. in.

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 workmanship is good. On Completion the machinery was examined while running full power trials and found to work satisfactorily. It is now in good and efficient condition and eligible in my opinion to have the record of **LMC 2, 10** marked in the Society's Register Book.

It is submitted that this vessel is eligible for THE RECORD

**LMC 2, 10**

F.D.

*J. M. Austin*

18/2/10

*Q. R. J.*

The amount of Entry Fee .. £ 3 : : When applied for, \_\_\_\_\_

Special .. £ 46 : 18 : : 10/2/1910

Donkey Boiler Fee .. £ : : : When received, \_\_\_\_\_

Travelling Expenses (if any) £ : : : 12/2/1910

Committee's Minute **GLASGOW** 15 FEB. 1910

Assigned **+ LMC 2, 10**

72. MACHINERY CERTIFICATE WRITTEN 16.2.10

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