

# REPORT ON MACHINERY.

No. 16879  
WED. JUN. 23 1915

Date of writing Report 17 June 1915 When handed in at Local Office 21 June 1915 Port of Greenock

No. in Survey held at Greenock Date, First Survey 19th May 1914 Last Survey 19 June 1915  
Reg. Book. on the SCREW STEAMER Elision (Number of Visits 78)

Master Wren Built at Port Glasgow By whom built Russell & Co Tons { Gross 2908  
Net 1842

Engines made at Greenock By whom made Rankin & Blackmore Ltd when made 1915

Boilers made at Greenock By whom made Rankin & Blackmore Ltd when made 1915

Registered Horse Power Owners Elision & Co Ltd, 45 Victoria St, Glasgow Port belonging to Glasgow

Nom. Horse Power as per Section 28 285 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

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

Dia. of Cylinders 23-38-61 Length of Stroke 42 Revs. per minute 65 Dia. of Screw shaft as per rule 13.15 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 No If two liners are fitted, is the shaft lapped or protected between the liners No Length of stern bush 4.7

Dia. of Tunnel shaft as per rule 11.44 Dia. of Crank shaft journals as per rule 12.1 Dia. of Crank pin 12.8 Size of Crank webs 22.5 x 4.5 Dia. of thrust shaft under collars 12.8 Dia. of screw 16.6 Pitch of Screw 16.0 No. of Blades 4 State whether moveable No Total surface 85 sq. ft.

No. of Feed pumps 2 Diameter of ditto 3.2 Stroke 23 Can one be overhauled while the other is at work Yes

No. of Bilge pumps 2 Diameter of ditto 4 Stroke 23 Can one be overhauled while the other is at work Yes

No. of Donkey Engines 3 Sizes of Pumps 6 x 4.5 x 6, 9 x 12 x 12, 5 x 3 x 6 No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room Three, 3" dia In Holds, &c. N°1 HOLD Two 3" dia N°2 HOLD Two 3" dia

N°3 HOLD Two 3" dia N°4 HOLD Two 3" dia TUNNEL WELL One 2.5" dia

No. of Bilge Injections 1 sizes 3.2 Connected to condenser, or to circulating pump C.P. Is a separate Donkey Suction fitted in Engine room & size Yes, 3.2

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

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 None

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 10/3/15 of Stern Tube 10/3/15 Screw shaft and Propeller 5/5/15

Is the Screw Shaft Tunnel watertight Yes Is it fitted with a watertight door Yes worked from Top Platform

BOILERS, &c.—(Letter for record 5(7) Manufacturers of Steel Steel Coy of Scotland

Total Heating Surface of Boilers 4702 Is Forced Draft fitted No No. and Description of Boilers 2 Cylinders & Hull Single

Working Pressure 180 lbs Tested by hydraulic pressure to 360 lbs Date of test 31/3/15 No. of Certificate 1217

Can each boiler be worked separately Yes Area of fire grate in each boiler 61 sq. ft. No. and Description of Safety Valves to each boiler 2, Direct Spring Area of each valve 7.06 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 20 Mean dia. of boilers 15.9 Length 10.6 Material of shell plates Steel

Thickness 1.4 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 Diameter of rivet holes in long. seams 1.32 Pitch of rivets 8.8 4.76 Top of plates or width of butt straps 1.62

Per centages of strength of longitudinal joint rivets 86.4 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, Deighton's Material Steel Outside diameter 50.4

Length of plain part top 6.82 Thickness of plates crown 1.9 Description of longitudinal joint weld No. of strengthening rings none

Working pressure of furnace by the rules 188 lbs Combustion chamber plates: Material Steel Thickness: Sides 5.8 Back 5.8 Top 5.8 Bottom 3.4

Pitch of stays to ditto: Sides 8 x 9.4 Back 8 x 9 Top 8 x 8.4 If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 183 lbs

Material of stays Steel Diameter at smallest part 1.76 Area supported by each stay 7.4 Working pressure by rules 190 lbs End plates in steam space:

Material Steel Thickness 1.76 Pitch of stays 22 x 18.8 How are stays secured Double nuts Working pressure by rules 183 lbs Material of stays Steel

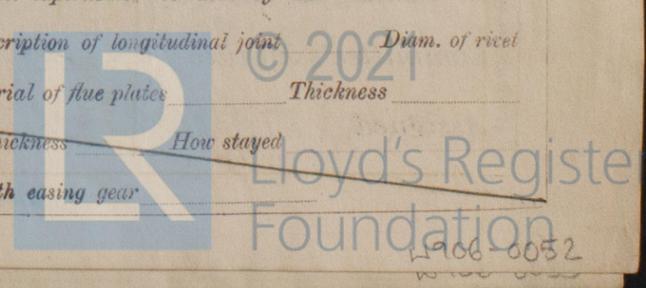
Diameter at smallest part 7.5 Area supported by each stay 39.4 Working pressure by rules 188 lbs Material of Front plates at bottom Steel

Thickness 1.3 Material of Lower back plate Steel Thickness 1.3 Greatest pitch of stays 13 Working pressure of plate by rules 185 lbs

Diameter of tubes 3.4 Pitch of tubes 4.8 x 4.8 Material of tube plates Steel Thickness: Front 1.3 Back 3.4 Mean pitch of stays 8.4

Pitch across wide water spaces 1.72 Working pressures by rules 228 lbs 263 lbs Girders to Chamber tops: Material Steel Depth and thickness of girder at centre 9 x 1.2 Length as per rule 32.8 Distance apart 8.4 Number and pitch of stays in each 3, 8

Working pressure by rules 185 lbs Superheater or Steam chest; how connected to boiler none Can the superheater be shut off and the boiler worked separately Yes



le 34.62  
given as  
ular  
Water Capac  
Tons.  
65  
5:30-6c  
19:24.2  
7H

VERTICAL DONKEY BOILER— Manufacturers of Steel

No. \_\_\_\_\_ Description *As per Report attached hereto ✓*

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:— *The top end bolts. The bottom end bolts. Two main bearing bolts. One set coupling bolts. One set main pump valves. One set bilge pump valves. One set main check valves. One set donkey check valves. One set safety valve springs. 12 bank ring studs. Both ends. ✓*

The foregoing is a correct description,  
**RANKIN & BLACKMORE, LTD.,**  
*H. J. ...* Manufacturer.  
*Director.*

Dates of Survey while building	During progress of work in shops --	1914. May 19-22. June 10-19-25-29. Aug. 3-10-17-21-25. Sep. 1-5-10-21-30. Oct. 2-7-15-21-23-27-30. Nov. 4-6-10-13-17-25-30
	During erection on board vessel ---	Dec. 4-7-9-11-16-18-23-26-29-1915. Jan. 6-7-9-11-22. Feb. 1-3-10-12-18-22-25. Mar. 4-10-17.
	Total No. of visits	48

Is the approved plan of main boiler forwarded herewith *yes ✓*  
 " " " donkey " " " *yes ✓*

Dates of Examination of principal parts—Cylinders *18/12/14*. Slides *22/1/15*. Covers *5/4/15*. Pistons *5/4/15*. Rods *18/12/14*

Connecting rods *22/1/15*. Crank shaft *25/2/15*. Thrust shaft *31/3/15*. Tunnel shafts *22/1/15*. Screw shaft *3/3/15*. Propeller *5/4/15*

Stern tube *10/3/15*. Steam pipes tested *27/5/15*. Engine and boiler seatings *11/3/15*. Engines holding down bolts *4/6/15*

Completion of pumping arrangements *15/6/15*. Boilers fixed *25/5/15*. Engines tried under steam *18/6/15*

Main boiler safety valves adjusted *15/6/15*. Thickness of adjusting washers *P 3/16 S 9/32 P 1/4 S 5/16*

Material of Crank shaft *Steel*. Identification Mark on Do. *1366*. Material of Thrust shaft *Steel*. Identification Mark on Do. *148*

Material of Tunnel shafts *Steel*. Identification Marks on Do. *148*. Material of Screw shafts *Steel*. Identification Marks on Do. *148*

Material of Steam Pipes *Iron ✓*. Test pressure *600 lb. ✓*

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

*The machinery and boilers of this steamer have been constructed under special survey and placed on board in accordance with the Society's Rules. They are now in our opinion in safe working condition and the case is respectfully submitted for the notification + L.M.C. 6.15. in The Register Book.*

*It is submitted that this vessel is eligible for THE RECORD + L.M.C. 6.15.*

*J.P.S.*

The amount of Entry Fee .. £	2 : 0	When applied for,
Special .. .. .	£ 34 . 5	21-6-1915
Donkey Boiler Fee .. .. .	£ :	When received,
Travelling Expenses (if any) £	:	22-6-1915

*Wm. Austin, James Jones.*  
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute **GLASGOW 22 JUN. 1915**  
 Assigned + L.M.C. 6.15

MACHINERY CERTIFICATE  
 DATED 23-6-15



Certificate (if required) to be sent to the Surveyors or below the space for Committee's Minute.

22/6/15