

Rpt. 4.

REPORT ON MACHINERY

No. 32253

WED JAN 22 1913

Date of writing Report 15. 1. 13 When handed in at Local Office 15. 1. 13 Port of Glasgow.
No. in Survey held at Glasgow. Date, First Survey 31. 1. 12 Last Survey 14. 1. 1913.
Reg. Book. New. on the S.S. "VOLTURNUS" (Number of Visits 35) Gross 615
Master Y. Cartwright Built at Workington By whom built R. Williamson & Son (No 215) Tons Not 252
Engines made at Glasgow. By whom made Ross & Duncan (No 914) When built 1913
Boilers made at Glasgow. By whom made Ross & Duncan (No 1395) when made 1913
Registered Horse Power Owners Rogers & Bright Ltd. Port belonging to Liverpool
Nom. Horse Power as per Section 28 110. 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 24" Revs. per minute 89. Dia. of Screw shaft as per rule 8.3 Material of Man screw shaft as fitted 8.3
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 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 Length of stern bush 2' 10 1/2"
Dia. of Tunnel shaft as per rule 4.2 Dia. of Crank shaft journals as per rule 4.56 Dia. of Crank pin 4 5/8 Size of Crank webs 11 x 5 Dia. of thrust shaft under collars 4 7/8 Dia. of screw 10' - 6" Pitch of Screw 13' - 0" No. of Blades 4 State whether moveable Yes Total surface 40 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 1/4" Stroke 13 1/2" Can one be overhauled while the other is at work Yes
No. of Donkey Engines 3 Sizes of Pumps 6 x 4 1/2 x 6" 6 x 6 x 6" 6 x 8 x 6" No. and size of Suctions connected to both Bilge and Donkey pumps In Engine Room 1 - 2 1/4", 2 - 2" & 1 - 2" special 3 1/4 x 2 x 4 In Holds, &c. 2 - 3"

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 Hold & tank suction How are they protected 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 Barrow Report of Stern Tube 19. 8. 12. Screw shaft and Propeller 9. 9. 12.
Is the Screw Shaft Tunnel watertight none Is it fitted with a watertight door worked from

BOILERS, &c.—(Letter for record (S)) Manufacturers of Steel David Colville & Sons & The Lancashire Steel Co.

Total Heating Surface of Boilers 1956 ft² Is Forced Draft fitted no No. and Description of Boilers One single ended marine
Working Pressure 180 lbs. Tested by hydraulic pressure to 360 lbs. Date of test 9. 10. 12 No. of Certificate 11804.
Can each boiler be worked separately Area of fire grate in each boiler 56 1/2 ft² No. and Description of Safety Valves to each boiler 2 - spring loaded Area of each valve 5.94 ft² Pressure to which they are adjusted 185 lbs. Are they fitted with easing gear Yes
Smallest distance between boiler or uptakes and bunkers or woodwork 4' - 0" Mean dia. of boilers 14' - 6" Length 10' - 0" Material of shell plates Steel
Thickness 1 3/16" Range of tensile strength 28/32 Are the shell plates welded or flanged No Descrip. of riveting: cir. seams D.R. 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 1' - 5 1/2"
Per centages of strength of longitudinal joint rivets 86.6 Working pressure of shell by rules 181 lbs. Size of manhole in shell 16 x 12"
Size of compensating ring 7 x 1 3/16" No. and Description of Furnaces in each boiler 3 - Corrugated Material steel Outside diameter 3' - 10 1/4"
Length of plain part top 9' bottom 7' Thickness of plates crown 3/16" Description of longitudinal joint weld No. of strengthening rings
Working pressure of furnace by the rules 190 lbs. Combustion chamber plates: Material steel Thickness: Sides 3/32" Back 2 1/32" Top 2 1/32" Bottom 1/16"
Pitch of stays to ditto: Sides 9 1/2 x 8 1/2" Back 9 x 9" Top 9 1/2 x 8 1/2" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 183 lbs.
Material of stays steel Diameter at smallest part 2.07" Area supported by each stay 81 ft² Working pressure by rules 230 End plates in steam space: Material steel Thickness 1 3/16" Pitch of stays 16 1/2 x 21" How are stays secured D.N.W. Working pressure by rules 184 lbs Material of stays steel
Diameter at smallest part 6.21" Area supported by each stay 356 ft² Working pressure by rules 180 Material of Front plates at bottom steel
Thickness 3/32" Material of Lower back plate steel Thickness 7/8" Greatest pitch of stays 13 1/2 x 9" Working pressure of plate by rules 218 lbs
Diameter of tubes 3 1/2" Pitch of tubes 4 1/2 x 4 5/8" Material of tube plates steel Thickness: Front 3 1/32" Back 2 5/32" Mean pitch of stays 11 5/32"
Pitch across wide water spaces 14" Working pressures by rules 183 lbs. Girders to Chamber tops: Material Iron Depth and thickness of girder at centre 7 x 2 1/4" Length as per rule 2' - 4 1/2" Distance apart 8 1/2" Number and pitch of stays in each 2 - 9 1/4"
Working pressure by rules 211 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

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 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 Top end bolts, 2 bottom end bolts, 2 main bearing bolts, 1 set couple bolts, 1 set feed & bilge pump valves, 2 propeller blades, 1 in & bolts of various sizes, 1 set L.P. piston & 1 H.P. piston valves, 1 set safety valve springs.

The foregoing is a correct description,

Ross Duncan & Co. Manufacturer.

Dates of Survey
 During progress of work in shops -- 1912. Jan. 31. Feb. 14. 20. Mar. 1. 8. 14. 19. April 1. 9. 12. 16. 19. 23. 30. May 6. 7. 9. 15. 22. 28. 31. June 4. 10. 13. 17. 24.
 During erection on board vessel -- 1913. Jan. 7. 10. 13. 24.
 Total No. of visits = 55.

Is the approved plan of main boiler forwarded herewith Yes

" " " donkey " " " Yes.

Dates of Examination of principal parts—Cylinders 30. 4. 12 Slides 23. 4. 12 Covers 31. 5. 12 Pistons 31. 5. 12 Rods 28. 5. 12

Connecting rods 1. 4. 12 Crank shaft 19. 4. 12 Thrust shaft 9. 9. 12 Tunnel shafts 29. 12. 12 Screw shaft 9. 9. 12 Propeller 19. 8. 12

Stern tube 19. 8. 12 Steam pipes tested 10. 12. 12 Engine and boiler seatings 29. 12. 12 Engines holding down bolts 13. 12. 12.

Completion of pumping arrangements 24. 12. 12. Boilers fixed 13. 12. 12. Engines tried under steam 14. 1. 13.

Main boiler safety valves adjusted 9. 1. 13. Thickness of adjusting washers 8. 3/8" p. 5/16"

Material of Crank shaft Iron Identification Mark on Do. 5285. Material of Thrust shaft Iron Identification Mark on Do. 5285.

Material of Tunnel shafts Identification Marks on Do. ✓ Material of Screw shafts Iron Identification Marks on Do. 5285.

Material of Steam Pipes Copper Test pressure 360 lbs.

General Remarks (State quality of workmanship, opinions as to class, &c. The materials and workmanship are good. The machinery and boilers of this vessel have been constructed under special survey and are in accordance with the Rules and approved plans have been securely fitted on board and tried with satisfactory results under steam and are, in my opinion, eligible for classification and to have record + L.M.C. 1, 13.

The boiler is a duplicate of Ross & Duncan's No. 1338, Glasgow Rpt No. 30504.

It is submitted that this vessel is eligible for THE RECORD. + L M C 1, 13

H.E.D.
 24. 1. 13.

The amount of Entry Fee .. £ 2 : 0 : 0 When applied for.
 Special .. £ 16 : 10 : 0 16/1/13.
 Donkey Boiler Fee .. £ 1 : - : 6 When received.
 Travelling Expenses (if any) £ 1 : - : 6 18/1/13.

Committee's Minute GLASGOW 21 JAN. 1913

Assigned + L M C 1, 13.

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

FRI. JAN. 24. 1913

FRI. FEB. - 7. 1913

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