

REPORT ON MACHINERY.

No. 31844
WED. SEP. 18. 1912

Received at London Office

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Date of writing Report 19 When handed in at Local Office 14.9.12 Port of Glasgow
 No. in Survey held at Glasgow Date, First Survey 11.11.11. Last Survey 10.9.1912.
 Reg. Book. 1948 on the T. S. S. "Infanta Isabel" (Number of Visits 35) Gross 8170.
 Master Built at Port Glasgow By whom built Russell & Co. Net 4844.
 Engines made at Glasgow By whom made David Rowan & Co. 592/3. when made 1912
 Boilers made at Glasgow By whom made David Rowan & Co. when made 1912
 Registered Horse Power Owners Pinillos, Aguirre & Co. Port belonging to Cadix
 Nom. Horse Power as per Section 28 1134 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted Yes

ENGINES, &c.—Description of Engines Twin Screw Quadruple No. of Cylinders 8 No. of Cranks 8
 Dia. of Cylinders (24 1/2 - 33 - 50 - 72) x 2 Length of Stroke 51" Revs. per minute 80 Dia. of Screw shaft as per rule 14.59. Material of shaft steel as fitted 1.6. screw shaft
 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 5.3
 Dia. of Tunnel shaft as per rule 13.44. Dia. of Crank shaft journals as per rule 14.1. Dia. of Crank pin 14 3/4 Size of Crank webs 9 3/4 Dia. of thrust shaft under collars 15 Dia. of screw 17.0 Pitch of Screw 21.6 No. of Blades 4 State whether moveable no Total surface 99 sq each
 No. of Feed pumps 4 Diameter of ditto 4 1/2 Stroke 27 Can one be overhauled while the other is at work Yes Pr. Weirs. 11 1/2 - 15 1/2 x 26. Amt. Fed. 8 - 10 1/2 - 21
 No. of Bilge pumps 4 Diameter of ditto 4 1/2 Stroke 27 Can one be overhauled while the other is at work Yes
 No. of Donkey Engines 5 Sizes of Pumps 9.12 x 12 8 x 8 x 8 8.8 x 8 No. and size of Suctions connected to both Bilge and Donkey pumps
 In Engine Room 4 3 1/2 In Holds, &c. 2 3 1/2 each hold
 No. of Bilge Injections 2 sizes 8" Connected to condenser, or to circulating pump Pump Is a separate Donkey Suction fitted in Engine room & 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 Others 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 7 or 8" suction How are they protected Wood covering
 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 of Stern Tube of Screw shaft and Propeller Greenock Rpt.

BOILERS, &c.—(Letter for record (S)) Manufacturers of Steel William Beardmore & Co Ltd Glasgow worked from Top grating
 The Steel Company of Scotland Ltd
 James Dunlop & Co Ltd
 Total Heating Surface of Boilers 20610 Is Forced Draft fitted no No. and Description of Boilers 3 D.C. & 2 S.B.
 Working Pressure 215 lbs Tested by hydraulic pressure to 430 lbs Date of test 9/5/12 No. of Certificate 11573
 Can each boiler be worked separately Yes Area of fire grate in each boiler 150 sq (D.E.) No. and Description of Safety Valves to each boiler Double spring Area of each valve 12.56 Pressure to which they are adjusted 220 lbs Are they fitted with easing gear Yes
 Smallest distance between boilers or uptakes and bunkers or woodwork 26 1/2" Mean dia. of boilers 16.6 Length 19.0 Material of shell plates steel
 Thickness 1/2, 1 1/2 Range of tensile strength 28.4 95 to 32 Are the shell plates welded or flanged no Descrip. of riveting: cir. seams D. R. L.
 long. seams D. B. S. Diameter of rivet holes in long. seams 1 9/16 Pitch of rivets 10 1/2 Lap of plates or width of butt straps 23"
 Per centages of strength of longitudinal joint rivets 88.6 plate 85.1 Working pressure of shell by rules 215 lbs Size of manhole in shell 17" x 13"
 Size of compensating ring Flanged No. and Description of Furnaces in each boiler 8 Dighton Material steel Outside diameter 3.9 1/2
 Length of plain part top Thickness of plates crown 58 Description of longitudinal joint weld No. of strengthening rings
 bottom Working pressure of furnaces by the rules 222 Combustion chamber plates: Material steel Thickness: Sides 2 5/32 Back Top 2 5/32 Bottom 7/8"
 Pitch of stays to ditto: Sides 10 x 9 3/4 Back Top 10 x 9 3/4 If stays are fitted with nuts or riveted heads nuts Working pressure by rules 218
 Material of stays steel Diameter at smallest part 2.395 Area supported by each stay 97 Working pressure by rules 222 End plates in steam space:
 Material steel Thickness 1 7/16 Pitch of stays 20.68 How are stays secured D. rule Working pressure by rules 215 Material of stays steel
 Diameter at smallest part 2.6 Area supported by each stay 420 Working pressure by rules 240 Material of Front plates at bottom steel
 Thickness 7/8 Material of Lower back plate Thickness Greatest pitch of stays Working pressure of plate by rules
 Diameter of tubes 3 1/4 Pitch of tubes 4 1/2 x 4 1/2 Material of tube plates steel Thickness: Front 1" Back 7/8 Mean pitch of stays 10.99 11 1/2
 Pitch across wide water spaces 13 3/8 Working pressures by rules 215 Girders to Chamber tops: Material steel Depth and thickness of girder at centre 11 x 1 x 2 Length as per rule 40 1/4 Distance apart 9 3/4 Number and pitch of stays in each 3 at 10"
 Working pressure by rules 215 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

Double Ended Boilers. See Rpt 5a for particulars of Single Ended.

18.20.22.24.
 4.5.6.15.14
 21.22.23.24
 2.25.20 Aug.
 of Visits 106.

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:— *two top end bolts, 2 bottom end bolts, 2 main bearing bolts, set of coupling bolts all with nuts, feed & bilge pump valves, assorted bolts, iron etc. Also 1 propeller shaft & 2 blades, Thrust shaft, 1 section crank shaft, top & bottom end bushes, eccentric with strap & rod, etc, etc.*
 The foregoing is a correct description,

for *David Rowan & Co.* Manufacturer.

Dates of Survey while building
 During progress of work in shops: 1911. Nov. 11. 1912. Jan. 31. Feb. 6. 16. March 6. 8. 18. 20. April 2. 11. 15. 19.
 During erection on board vessel: May 1. 9. 13. 21. 22. 31. June 12. 18. 26. 27. 29. July 1. 5. 18. 30. Aug. 1. 8. 27. 31. Sept. 2. 5. 7. 10.
 Total No. of visits: 35.
 Is the approved plan of main boiler forwarded herewith *Yes - two*
 " " " donkey " " "

Dates of Examination of principal parts—Cylinders 15/4/12 16. Slides 18/6/12 Covers 18. 6-12 Pistons 18. 6-12 Rods 21-5-12
 Connecting rods 21-5-12 Crank shaft 15-4-12 Thrust shaft 18-6-12 Tunnel shafts 27-6-12 Screw shaft 22-5-12 Propeller 12-6-12
 Stern tube 12-6-12 Steam pipes tested 31/8/12 16. Engine and boiler seatings 18-7-12 Engines holding down bolts 8-8-12
 Completion of pumping arrangements 5-9-12 Boilers fixed 8-8-12 Engines tried under steam 10-9-12
 Main boiler safety valves adjusted 7-9-12 Thickness of adjusting washers F.P. 2 3/4, 6 5/16, F.S. 5 7/16, 3/4, P.A. 1/4, 5/16, C.A. 3/32, 5/16, S.A. 1/4, 1/2
 Material of Crank shaft *steel* Identification Mark on Do. *H. 5. 5* Material of Thrust shaft *steel* Identification Mark on Do. *H. 5. 5*
 Material of Tunnel shafts *steel* Identification Marks on Do. *H. 5. 6* Material of Screw shafts *steel* Identification Marks on Do. *H. 5. 5*
 Material of Steam Pipes *Iron* Test pressure *645 lbs.*

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

The engines & boilers of this vessel have been constructed under Special Survey & are of good materials & workmanship. They have been securely fitted on board & satisfactorily tried under steam.

This vessel is in my opinion eligible for the notation
 * LMC 9, 12 in the Register Book.

It is submitted that this vessel is eligible for THE RECORD. + LMC 9.12.

The amount of Entry Fee .. £ 3 : 0 :
 Special £ 76 : 14 :
 Donkey Boiler Fee £ : :
 Travelling Expenses (if any) £ : :
 When applied for, 11.9.12
 When received, 13.9.12.

H. Gardner-Smith
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute GLASGOW 17 SEP. 1912

Assigned + LMC 9-12.

Glasgow

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

