

REPORT ON MACHINERY.

No. 35459

WED. 22 SEP. 1915

Received at London Office

Date of writing Report 2.8.1915 When handed in at Local Office 19 Port of Glasgow

No. in Survey held at Glasgow Date, First Survey 13/8/14 Last Survey 16/9/1915
 Reg. Book. 184 on the S/S "Dara" (Number of Visits 61)

Master Built at Glasgow By whom built Russell & Co Tons Gross When built 1915
 Engines made at Glasgow By whom made Dunsonvi Jackson & Co (452) when made 1915
 Boilers made at ditto By whom made ditto when made 1915

Registered Horse Power Owners Boulay, Persia & Co Ltd Port belonging to Liverpool
 Nom. Horse Power as per Section 28 601 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

ENGINES, &c.—Description of Engines Triple Expansion No. of Cylinders 3 No. of Cranks 3

Dia. of Cylinders 26 1/2 - 44. 43 Length of Stroke 51 Revs. per minute 70 Dia. of Screw shaft as per rule 15.3 Material of S
as fitted 16 1/4 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 Yes Length of stern bush 5-5

Dia. of Tunnel shaft as per rule 13.98 Dia. of Crank shaft journals as per rule 14.64 Dia. of Crank pins 15 1/4 Size of Crank webs 30x10 Dia. of thrust shaft under
as fitted 11 1/2 collars 15 1/4 Dia. of screw 18.0 Pitch of Screw 18.6 No. of Blades 4 State whether moveable Yes Total surface 1074

No. of Feed pumps 2 Diameter of ditto 24" Stroke — Can one be overhauled while the other is at work Yes
 WEIRS 4.95

No. of Bilge pumps 2 Diameter of ditto 4 1/2 Stroke 26 Can one be overhauled while the other is at work Yes
 Aux. Feed 10x10 Ball 10x10 Donkey Feed 5.7

No. of Donkey Engines 3 Sizes of Pumps 10 No. and size of Suctions connected to both Bilge and Donkey pumps
 In Engine Room 4 3/2 Tunnel 1.2 1/2 In Holds, &c. 2. 3 1/2 in each hold.

No. of Bilge Injections 1 sizes 8" Connected to condenser to circulating pump Yes 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 Now

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 See Quowick Rept of Stern Tube & Quowick Rept. Screw shaft and Propeller & Quowick Rept

Is the Screw Shaft Tunnel watertight Yes Is it fitted with a watertight door Yes worked from U E R Platform.

BOILERS, &c.—(Letter for record R) Manufacturers of Steel Spencer Steel Co of Scotland & Dewar, Colville

Total Heating Surface of Boilers 9147 Is Forced Draft fitted Yes No. and Description of Boilers 3 Single Ended

Working Pressure 200 Tested by hydraulic pressure to 400 Date of test 24.5.15 No. of Certificate 13150

Can each boiler be worked separately Yes Area of fire grate in each boiler 57.5 No. and Description of Safety Valves to
 each boiler Double Spring Area of each valve 9.62 Pressure to which they are adjusted 205 Are they fitted with easing gear Yes

Smallest distance between boilers or uptakes and bunkers or woodwork 14 1/2 Mean dia. of boilers 15-10 3/4 Length 12-6 Material of shell plates S

Thickness 135/64 Range of tensile strength 29-33 Are the shell plates welded or flanged — Descrip. of riveting: cir. seams DR
 long. seams TR, DBS Diameter of rivet holes in long. seams 19/16 Pitch of rivets 10 1/2 Top of plates or width of butt straps 1-11/8

Per centages of strength of longitudinal joint rivets 84.75 Working pressure of shell by rules 215 Size of manhole in shell 16x12
plate 85.11

Size of compensating ring 43/4 x 19/16 No. and Description of Furnaces in each boiler 3 Corrugated Material S Outside diameter 4.2

Length of plain part top Thickness of plates bottom 23/32 Description of longitudinal joint weld No. of strengthening rings —

Working pressure of furnace by the rules 226 Combustion chamber plates: Material S Thickness: Sides 43/64 Back 11/16 Top 43/64 Bottom 15/16

Pitch of stays to ditto: Sides 9 1/8 x 8 1/8 Back 7 1/6 x 8 7/8 Top 7 1/2 x 9 If stays are fitted with nuts or riveted heads DN Working pressure by rules 235
area 3.85

Material of stays Iron at smallest part 16.23303 Area supported by each stay 74 Working pressure by rules 220 End plates in steam space:
 Material S Thickness 13/16 Pitch of stays 19 1/2 x 14 7/8 How are stays secured DN Working pressure by rules 215 Material of stays S
area 6.9 Area supported by each stay 290 Working pressure by rules 245 Material of Front plates at bottom S

Thickness 11/64 Material of Lower back plate S Thickness 31/32 Greatest pitch of stays 14 7/8 x 8 7/8 Working pressure of plate by rules 240

Diameter of tubes 2 1/2 Pitch of tubes 3 1/16 Material of tube plates S Thickness: Front 11/64 Back 27/32 Mean pitch of stays 9 7/32

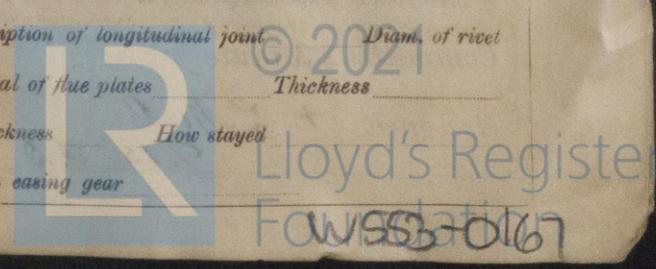
Pitch across wide water spaces 13 1/2 Working pressures by rules 205 Girders to Chamber tops: Material Iron Depth and
 thickness of girder at centre 11 x 1 (2) Length as per rule 38 3/32 Distance apart 9 9/16 Number and pitch of stays in each 4. 7 1/2

Working pressure by rules 215 Superheater or Steam chest; how connected to boiler 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 _____ Rivets _____

Dia. of rivet holes _____ Whether punched or drilled _____ Pitch of rivets _____ Lap of plating _____ Per centage of strength of joint _____ 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:— 2 connecting Rod bolts, 1 set of coupling bolts, 1 set of End, Balgic Pump Valves, 1 set of Piston Rings, 1 Propeller shaft, 1 Crank shaft (see throw) & quantity of assorted bolts, nuts & iron of various sizes.

DUNSMUIR & JACKSON, Limited.
The foregoing is a correct description,
James Dunsmuir Director, Manufacturer.

Dates of Survey while building	During progress of work in shops	1914 Aug. 13-17-24 Sept. 1-10-16-21 Oct. 2-7-13-19-22-28 Nov. 3-12-17-27-30 Dec. 7-14-1915 Jan. 12-19-26	Is the approved plan of main boiler forwarded herewith <input checked="" type="checkbox"/>
	During erection on board vessel	Feb. 3-9-16-19-25 Mar. 1-8-10-11-18-23-25-30 Apr. 1-7-8-13-15-26 May 10-24 June 2-26-28-28 July 5-7-12-13	
	Total No. of visits	61	

Dates of Examination of principal parts	Cylinders 7-12-14 Slides 12-11-14 Covers 10-9-14 Pistons 19-10-14 Rods 24-5-15
Connecting rods	24-5-15 Crank shaft 14-12-14 Thrust shaft 27-11-14 Tunnel shafts 14-12-14 Screw shaft 16-6-15 Propeller 16-6-15
Stern tube	16-6-15 Steam pipes tested 13-7-15 Engine and boiler seatings see framework Repl. Engines holding down bolts 9-8-15
Completion of pumping arrangements	9-8-15 Boilers fixed 7-7-15 Engines tried under steam 16-9-15
Main boiler safety valves adjusted	6-9-15 Thickness of adjusting washers FV 1/2 AV 5 PY 3/8 SY 1 3/2 PY 7/16 SY 3/8 FV 9/16 AV 3/8
Material of Crank shaft	Steel Identification Mark on Do. LLOYDS WGM 452
Material of Thrust shaft	Steel Identification Mark on Do. LLOYDS WGM 452
Material of Tunnel shafts	Steel Identification Marks on Do. LLOYDS WGM 452
Material of Screw shafts	Steel Identification Marks on Do. LLOYDS WGM 452
Material of Steam Pipes	Steel Test pressure 600lb

General Remarks (State quality of workmanship, opinions as to class, &c.)
These engines & boilers have been built under special survey in accordance with the approved plans, the workmanship & material are of good quality.
The machinery is eligible in my opinion for the record of
L.M.C. 9-15.

It is submitted that this vessel is eligible for THE RECORD + L.M.C. 9.15. F.D.

The amount of Entry Fee	£ 3 :-	When applied for, 13/9/15
Special	£ 50 :-	
Donkey Boiler Fee	£ :-	When received, 14/9/15
Travelling Expenses (if any)	£ :-	

W. Gordon-Fruelich
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute GLASGOW 21 SEP. 1915
Assigned + L.M.C. 9.15 F.D.

Form No. 11b
18/9/15

