

## REPORT ON MACHINERY.

No. 34100

Received at London Office WED. JUN. 10. 1914

of writing Report 8.5.1914 When handed in at Local Office 5/6/1914 Port of **GLASGOW**  
 in Survey held at **Glasgow** Date, First Survey 17.3.15 Last Survey 3.6.1914  
 on the **S/S "Spectator"** (Number of Vols 65.) Tons { Gross 3808 Net 2435 }  
 Built at **Glasgow** By whom built **E. Coull & Co. Ltd.** When built 1914  
 Engines made at **Glasgow** By whom made **Dunsmuir Jackson & Co. (Hull)** when made 1914  
 Makers made at **ditto** By whom made **ditto** (Hull) when made 1914  
 Registered Horse Power Owners **J. J. Harrison** Port belonging to **Liverpool**  
 m. Horse Power as per Section 28 392. Is Refrigerating Machinery fitted for cargo purposes **No** Is Electric Light fitted **Yes**  
**GINES, &c.—Description of Engines** Triple Expansion No. of Cylinders 3 No. of Cranks 3  
 a. of Cylinders 23-38 1/2 - 64 Length of Stroke 48 Revs. per minute 72 Dia. of Screw shaft as per rule 14-1/2 as fitted 15-1/2 Material of screw shaft S  
 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  
 the propeller boss **Yes** If the liner is in more than one length are the joints burned **Yes** 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  
 ers are fitted, is the shaft lapped or protected between the liners **Yes** Length of stern bush 5-0  
 a. of Tunnel shaft as per rule 12-8 as fitted 13 1/4 Dia. of Crank shaft journals as per rule 13 1/4 as fitted 13 1/4 Dia. of Crank pin 14 Size of Crank webs 26 1/2 x 9 1/2 Dia. of thrust shaft under  
 lars 13 3/4 Dia. of screw 14-0 Pitch of Screw 14-0 No. of Blades 4 State whether moveable **No** Total surface 90 1/2  
 o. of Feed pumps 2 Diameter of ditto 33 1/4 Stroke 26 Can one be overhauled while the other is at work **Yes**  
 o. of Bilge pumps 2 Diameter of ditto 4 Stroke 26 Can one be overhauled while the other is at work **Yes**  
 o. of Donkey Engines 3 Sizes of Pumps 7-9 1/2 x 2 1/2, 10 x 10 x 10, 7-4 1/2 x 8 No. and size of Suctions connected to both Bilge and Donkey pumps  
 Engine Room 4 3 1/2 in. Inman's Stokhold In Holds, &c. 2. 3 1/2 in. each hold, 1-2 1/2  
**m. Tunnel Drill.**  
 o. of Bilge Injections 1 sizes 7 Connected ~~to~~ 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 **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 **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 **Yes**  
 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 28-4-14 of Stern Tube 28-4-14 Screw shaft and Propeller 28-4-14  
 Is the Screw Shaft Tunnel watertight **Yes** Is it fitted with a watertight door **Yes** worked from **U.E.R. Platform**  
**OILERS, &c.—(Letter for record)** Manufacturers of Steel **Colville & Co. Ltd. & Spencer & Co.**  
 Total Heating Surface of Boilers 6684 Is Forced Draft fitted **No** No. and Description of Boilers 3 Single Ended  
 Working Pressure 215 Tested by hydraulic pressure to 430 Date of test 20-4-14 No. of Certificate 12665  
 Can each boiler be worked separately **Yes** Area of fire grate in each boiler 59.81 No. and Description of Safety Valves to  
 each boiler **Double Spring** Area of each valve 5.9 Pressure to which they are adjusted 220 Are they fitted with easing gear **Yes**  
 Smallest distance between boilers or uptakes and bunkers or woodwork 12 Mean dia. of boilers 15-4 9/16 Length 11-9 Material of shell plates S  
 Thickness 19 1/16 Range of tensile strength 30/33 Are the shell plates welded or flanged **Yes** Descrip. of riveting: cir. seams DR  
 Long. seams TR+DBS Diameter of rivet holes in long. seams 13 1/4 Pitch of rivets 10 7/16 Lap of plates or width of butt straps 1-11 1/2  
 Per centages of strength of longitudinal joint rivets 83.25 plate 84.8 Working pressure of shell by rules 246 Size of manhole in shell 16 x 12  
 Size of compensating ring **McAlister** No. and Description of Furnaces in each boiler 3 Corrugated Material S Outside diameter 3-11 1/2  
 Length of plain part top 45 1/4 bottom 45 1/4 Thickness of plates crown 45 1/4 bottom 45 1/4 Description of longitudinal joint **Weld** No. of strengthening rings **Yes**  
 Working pressure of furnace by the rules 244 Combustion chamber plates: Material S Thickness: Sides 3/4 Back 3/4 Top 3/4 Bottom 1 1/16  
 Pitch of stays to ditto: Sides 9 7/8 x 8 3/8 Back 9 1/2 x 8 3/8 Top 8 3/4 x 8 1/2 If stays are fitted with nuts or riveted heads **Nuts** Working pressure by rules 231  
 Material of stays S Area at smallest part 199.566343 Area supported by each stay 85 Working pressure by rules 216 End plates in steam space:  
 Material S Thickness 3/16 Pitch of stays 18 1/8 x 15 5/8 How are stays secured **DN** Working pressure by rules 221 Material of stays **Steel**  
 Area at smallest part 69 Area supported by each stay 284 Working pressure by rules 253 Material of Front plates at bottom S  
 Thickness 15 1/32 Material of Lower back plate S Thickness 1 Greatest pitch of stays 14 3/4 x 8 1/8 Working pressure of plate by rules 218  
 Diameter of tubes 3 1/4 Pitch of tubes 4 5/8 x 4 7/16 Material of tube plates S Thickness: Front 15 1/32 Back 15 1/16 Mean pitch of stays 10-8  
 Pitch across wide water spaces 14 1/4 Working pressures by rules 244 Girders to Chamber tops: Material **Iron** Depth and  
 thickness of girder at centre 11 x 1 (2) Length as per rule 40 5/16 Distance apart 8 3/4 Number and pitch of stays in each 4 at 8 1/2  
 Working pressure by rules 215 Superheater or Steam chest; how connected to boiler **Yes** 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  
 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

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# 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	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; nuts for top end, ditto for bottom end. 2 Main bearing bolts. 1 Set of Coupling bolts. 1 Set of Feed & Bilge Pump. 4 Aches 1 Set of Piston Rings 2 Quantity of assorted bolts. Nuts. Iron of various sizes.

DUNSMUIR & JACKSON, Limited.

Is foregoing a correct description,  
James Fletcher, Manufacturer.

Dates of Survey while building	During progress of work in shops --	1913 Mar 17-26. Apr 2-10. May 16-26.28. June 2-10. 16-24. July 2-16. 31. Aug 6-11. 15-18. 26-29.
	During erection on board vessel --	Sept 2-8. 12-18. 22. Oct 2-9. 14. 20. 31. Nov 3-10. 14. 20. 26. Dec 2-8. 17-24. 29.
	Total No. of visits	65

Is the approved plan of main boiler forwarded herewith

Yes

Dates of Examination of principal parts—Cylinders 25. 2. 14 Slides 9. 1. 14 Covers 9. 1. 14 Pistons 9. 1. 14 Rods 2. 12. 13  
Connecting rods 2. 12. 13 Crank shaft 17. 12. 13 Thrust shaft 29. 8. 13 Tunnel shafts 29. 8. 13 Screw shaft 31. 3. 14 Propeller 31. 3. 14  
Stern tube 2. 12. 13 Steam pipes tested 15. 5. 14 Engine and boiler seatings 28 4. 14 Engines holding down bolts 18- 5. 14  
Completion of pumping arrangements 22 5. 14 Boilers fixed 18- 5. 14 Engines tried under steam 2-6-14  
Main boiler safety valves adjusted 22 5. 14 Thickness of adjusting washers PR 13/32 SR 11/32 PR 13/32 SR 13/32 PR 3/8 SR 3/8  
Material of Crank shaft S Identification Mark on Do. LLOYDS WGM HHI Material of Thrust shaft S Identification Mark on Do. LLOYDS WGM HHI  
Material of Tunnel shafts S Identification Marks on Do. HHI Material of Screw shafts S Identification Marks on Do. HHI  
Material of Steam Pipes Iron Test pressure 645 lbs

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 plan & the workmanship & material are of good quality  
The Machinery of this Vessel is eligible in my opinion for the Record of LMC 6-14

It is submitted that this vessel is eligible for THE RECORD. + LMC 6-14.

JWD 11/6/14  
A. R. R.

The amount of Entry Fee	£ 3	When applied for.
Special	£ 39. 12	6/57 1914.
Donkey Boiler Fee	£	When received.
Travelling Expenses (if any)	£	10/6 1914

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

Committee's Minute GLASGOW 9-JUN. 1914

Assigned + L.M.C. 6.14.

Surveyor's Signature



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GLASGOW

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

24-11  
6/6/14