

# REPORT ON MACHINERY.

No. 8943.

Received at London Office FRI. APR. 17. 1914

Date of writing Report 15<sup>th</sup> April 1914 When handed in at Local Office 16<sup>th</sup> April 1914 Port of Southampton  
 No. in Survey held at Southampton Date, First Survey 25<sup>th</sup> Sept. 1913 Last Survey 15<sup>th</sup> April 1914.  
 Reg. Book. 14 Sub. on the ss. TOWY (Number of Visits 39) Tons } Gross 199.02  
 Net

Master ✓ Built at Southampton By whom built Day Summers & Co Ltd When built 1914

Engines made at Southampton By whom made Day Summers & Co Ltd when made 1914

Boilers made at Southampton By whom made Day Summers & Co Ltd when made 1914

Registered Horse Power ✓ Owners The Royal Mail Steam Packet Co. Ltd Port belonging to Southampton

Nom. Horse Power as per Section 28 52 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted No

ENGINES, &c.—Description of Engines Compound Surface Condensing No. of Cylinders 2 No. of Cranks 2

Dia. of Cylinders 15" - 30" Length of Stroke 24" Revs. per minute 140 Dia. of Screw shaft as per rule 6.64" Material of screw shaft Iron  
 as fitted 6.34"

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 ✓ If two

liners are fitted, is the shaft lapped or protected between the liners ✓ Length of stern bush 2'-5"

Dia. of Tunnel shaft as per rule 6.21" Dia. of Crank shaft journals as per rule 6.52" Dia. of Crank pin 6 5/8" Size of Crank webs 12 7/8" x 4 1/2" Dia. of thrust shaft under

collars 6 5/8" Dia. of screw 6'-10" Pitch of Screw 8'-7 1/2" No. of Blades 4 State whether moveable No Total surface 21.5 sq ft

No. of Feed pumps 1 Diameter of ditto 2 1/4" Stroke 12" Can one be overhauled while the other is at work ✓

No. of Bilge pumps 1 Diameter of ditto 2 1/2" Stroke 12" Can one be overhauled while the other is at work ✓

No. of Donkey Engines 2 Sizes of Pumps 4 1/2" x 2 3/4" x 4 1/2", 4 1/2" x 2 3/4" x 4 1/2" No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room 4 Stokehold 3'-2" In Holds, &c. one each side (port + starboard) 2"

No. of Bilge Injections 1 sizes 3" 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 ✓

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 Bilge suction pipes to forehold How are they protected Under the ceiling

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 18-2-14 of Stern Tube 18-2-14 Screw shaft and Propeller 20-2-14

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 Wm Beardmore & Co Ltd. The Lancashire Steel Co Ltd.

Total Heating Surface of Boilers 1050 sq ft Is Forced Draft fitted No No. and Description of Boilers One single-ended multitubular

Working Pressure 120 lbs Tested by hydraulic pressure to 240 lbs Date of test 21/1/14 No. of Certificate 305

Can each boiler be worked separately ✓ Area of fire grate in each boiler 40 sq ft No. and Description of Safety Valves to

each boiler 2-spring-loaded Area of each valve 7.07 sq in Pressure to which they are adjusted 125 lbs Are they fitted with easing gear Yes

Smallest distance between boilers or uptakes and bunkers or woodwork 12" Mean dia. of boilers 11'-0 23/32" Length 9'-0" Material of shell plates Steel

Thickness 23/32" Range of tensile strength 29/32 tons Are the shell plates welded or flanged No Descrip. of riveting: cir. seams S.R. Lap

long. seams D.R. Butt Diameter of rivet holes in long. seams 1" Pitch of rivets 4" Lap of plates or width of butt straps 10"

Per centages of strength of longitudinal joint rivets 81.2% plate 75% Working pressure of shell by rules 122 lbs Size of manhole in shell 16 x 12"

Size of compensating ring 6 1/2" x 23/32" No. and Description of Furnaces in each boiler 2-Corrugated Material Steel Outside diameter 3'-5 1/4"

Length of plain part top ✓ bottom ✓ Thickness of plates crown 3/8" bottom 3/8" Description of longitudinal joint Weld No. of strengthening rings ✓

Working pressure of furnace by the rules 122 lbs Combustion chamber plates: Material Steel Thickness: Sides 17/32" Back 19/32" Top 17/32" Bottom 7/8"

Pitch of stays to ditto: Sides 9 1/2" x 7 3/4" Back 10" x 10" Top 8" x 9" If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 120 lbs

Material of stays Steel Diameter at smallest part 1.19 in Area supported by each stay 72 sq in Working pressure by rules 132 lbs End plates in steam space:

Material Steel Thickness 13/16" Pitch of stays 16 1/2" x 15 1/2" How are stays secured D.N.4 Washers Working pressure by rules 124 lbs Material of stays Steel

Diameter at smallest part 3.26 in Area supported by each stay 252 sq in Working pressure by rules 134 lbs Material of Front plates at bottom Steel

Thickness 13/16" Material of Lower back plate Steel Thickness 23/32" Greatest pitch of stays 13 1/2" x 10" Working pressure of plate by rules 126 lbs

Diameter of tubes 3" Pitch of tubes 4 1/8" x 4" Material of tube plates Steel Thickness: Front 13/16" Back 3/4" Mean pitch of stays 12 7/8"

Pitch across wide water spaces 13 1/2" Working pressures by rules 129 lbs Girders to Chamber tops: Material Steel Depth and

thickness of girder at centre 5 1/2" x 1 1/2" Length as per rule 24" Distance apart 9" Number and pitch of stays in each 2-8"

Working pressure by rules 128 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

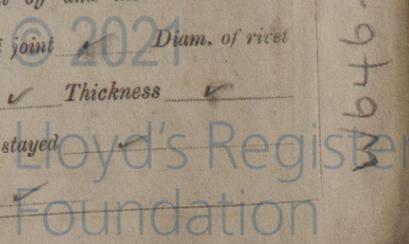
holes ✓ Pitch of rivets ✓ Working pressure of shell by rules ✓ Diameter of flue ✓ Material of flue plates ✓ Thickness ✓

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 ✓

Dated April 23, 1914.

7810-949



**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
Values	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 & nuts; two bottom end bolts & nuts; two main bearing bolts; one set of coupling bolts; one set of feed & bilge pump valves; assorted bolts & nuts; & iron of various sizes.

The foregoing is a correct description,

*L. S. S. S.* Manufacturer.

Dates of Survey while building	During progress of work in shops --	Sept 25 <sup>th</sup> , Oct 3, 15, 22, 29, Nov. 3, 6, 14, 18, 26, Dec. 1, 8, 15, 18, 29, 30, 1913
	During erection on board vessel ---	Feb. 24, Mar. 2, 4, 6, 9, 11, 18, 20, Apr. 8, 15, 1914.
	Total No. of visits	39.

Is the approved plan of main boiler forwarded herewith *yes*

**Dates of Examination of principal parts**—Cylinders 18-11-13 Slides 1-12-13 Covers 14-11-13 Pistons 1-12-13 Rods 3-10-13  
 Connecting rods 19-11-13 Crank shaft 15-10-13 Thrust shaft 26-1-14 Tunnel shafts 11-12-13 Screw shaft 13-2-14 Propeller 11-2-14  
 Stern tube 18-12-13 Steam pipes tested 6-3-14 Engine and boiler seatings 18-2-14 Engines holding down bolts 4-3-14  
 Completion of pumping arrangements 9-3-14. Boilers fixed 2-3-14. Engines tried under steam 11-3-14.  
 Main boiler safety valves adjusted 11-3-14. Thickness of adjusting washers Star valve 5/16" Port valve 3/16"  
 Material of Crank shaft *Iron* Identification Mark on Do. 116 J.H. Material of Thrust shaft *Iron* Identification Mark on Do. 116 J.H.  
 Material of Tunnel shafts *Iron* Identification Marks on Do. 116 J.H. Material of Screw shafts *Iron* Identification Marks on Do. 116 J.H.  
 Material of Steam Pipes *Solid drawn copper* Test pressure 240 lbs per sq inch.

**General Remarks** (State quality of workmanship, opinions as to class, &c.)  
 The engines & boiler of this vessel have been built under special survey, the materials & workmanship being sound & good. The machinery has been efficiently fitted on board, tried under steam & found satisfactory. The boiler safety valves have been adjusted under steam to their working pressure, tried for accumulation & found satisfactory. In my opinion the machinery of this vessel is now eligible to be classed in the Register Book with the notation + L.M.C. 4-14.

It is submitted that this vessel is eligible for THE RECORD. + L.M.C. 4. 14.

*JWD* 20/11/14  
*J.P.R.*

*John Houston*  
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping

The amount of Entry Fee .. £	1 : 0 : 0	When applied for, 16 <sup>th</sup> Apr. 1914.
Special .. .. . £	8 : 0 : 0	
Donkey Boiler Fee .. .. . £	:	When received, 21.4.14
Travelling Expenses (if any) £	:	

Committee's Minute  
 Assigned  
 FRI. APR. 24. 1914  
 + L.M.C. 4, 14

Surveyor's signature

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

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