

## REPORT ON MACHINERY.

No. 6402.

Port of Southampton

Received at London Office

THUR. 12 JAN 1907

No. in Survey held at Southampton

Reg. Book.

Date, first Survey March 22<sup>nd</sup> Last Survey 7<sup>th</sup> Jan 1907.(Number of Visits 44)on the Screw Lug S/S No 138.

Master Built at Southampton By whom built Mrs Day Summers & Co Ld Tons { Gross 85.8  
 Net 1.73  
 Engines made at Southampton By whom made Mrs Day Summers & Co Ld When built 1907-1  
 Boilers made at do By whom made do when made 1907-1

Registered Horse Power 50 Owners Not yet sold, built on spec Port belonging to Not registered  
 Nom. Horse Power as per Section 28 50 Is Refrigerating Machinery fitted for cargo purposes ✓ Is Electric Light fitted ✓

ENGINES, &c.—Description of Engines Inverted Compound Surface Condensing No. of Cylinders Two No. of Cranks Two  
 Dia. of Cylinders 15" 9 30" Length of Stroke 24" Revs. per minute 130 Dia. of Screw shaft as per rule 6.98 Material of iron  
 Is the screw shaft fitted with a continuous liner the whole length of the stern tube no liners Is the after end of the liner made water tight  
 in the propeller boss ✓ 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" White metal  
 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" Size of Crank webs 4 1/2 x 9 1/2 Dia. of thrust shaft under  
 collars 6.5" Dia. of screw 7.4 Pitch of Screw 9.3" No. of Blades 4 State whether moveable no Total surface 20 1/2 sq ft  
 No. of Feed pumps one Diameter of ditto 2 1/4" Stroke 12" Can one be overhauled while the other is at work ✓  
 No. of Bilge pumps one Diameter of ditto 2 1/2" Stroke 12" Can one be overhauled while the other is at work ✓  
 No. of Donkey Engines one Sizes of Pump 3 1/4, 4 1/2, 4" duplex No. and size of Suctions connected to both Bilge and Donkey pumps  
 In Engine Room Two 2" Suctions. In Holds, &c. one 2" Suction in each hold.

No. of Bilge Injections one size 3" Connected to condenser, or to circulating pump no 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 no  
 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 ✓  
 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 Sep 6<sup>th</sup> of Stern Tube Sept 6 Screw shaft and Propeller Sept 6<sup>th</sup>  
 Is the Screw Shaft Tunnel watertight ✓ Is it fitted with a watertight door ✓ worked from ✓

BOILERS, &c.—(Letter for record S.) Manufacturers of Steel Robert Stephenson & Co. Ltd. Barrow-in-Furness Iron Co.

Total Heating Surface of Boilers 951 sq ft Is Forced Draft fitted no No. and Description of Boilers one cylindrical Multitubular  
 Working Pressure 120 lbs Tested by hydraulic pressure to 240 lbs Date of test Sept 18 No. of Certificate 257  
 Can each boiler be worked separately ✓ Area of fire grate in each boiler 38 sq ft No. and Description of Safety Valves to  
 each boiler Two Spring loaded Area of each valve 5.939" 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 8" Mean dia. of boilers 10.6" Length 9.0" Material of shell plates Steel  
 Thickness 1 1/16" Range of tensile strength 29 1/2 to 32 lbs Are the shell plates welded or flanged ✓ Descrip. of riveting: cir. seams D.R. Lap  
 long. seams D.R. Butt Strap 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 84.9% Working pressure of shell by rules 120.5 lbs Size of manhole in shell 12 x 16"  
 Size of compensating ring 1 1/16" McNeil No. and Description of Furnaces in each boiler Two plain Material Steel Outside diameter 3.24"  
 Length of plain part top 6.3" Thickness of plates bottom 3 1/2" Description of longitudinal joint double butt straps No. of strengthening rings ✓  
 Working pressure of furnace by the rules 120 lbs Combustion chamber plates: Material Steel Thickness: Sides 1 1/32" Back 7/16" Top 19/32" Bottom 17/32"  
 Pitch of stays to ditto: Sides 8 3/4 x 8 Back 9 1/2 x 9 1/2 Top 8 x 11 1/4 If stays are fitted with nuts or riveted heads nuts Working pressure by rules 121 lbs  
 Material of stays Steel Diameter at smallest part 1.448 Area supported by each stay 90.25 Working pressure by rules 128 lbs End plates in steam space:  
 Material Steel Thickness 1 1/16" Pitch of stays 15 1/2 x 16 1/4 How are stays secured Nuts & Washers Working pressure by rules 124 lbs Material of stays Steel  
 Diameter at smallest part 3.03 Area supported by each stay 251.875 Working pressure by rules 120 lbs Material of Front plates at bottom Steel  
 Thickness 3 1/16" Material of Lower back plate Steel Thickness 3 1/2" Greatest pitch of stays nothing Working pressure of plate by rules 120 lbs  
 Diameter of tube 3 1/2" Pitch of tubes 4 1/2 x 4 1/2 Material of tube plates Steel Thickness: Front 1 1/16" Back 3/4" Mean pitch of stays 13 1/2"  
 Pitch across wide water spaces 13" Working pressures by rules 120 lbs Girders to Chamber tops: Material Steel Depth and  
 thickness of girder at centre 5 3/4 x 1 1/2 Length as per rule 1-11 1/2 Distance apart 11 1/4" Number and pitch of stays in each Two 8 x 11 1/4  
 Working pressure by rules 129 lbs 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 ✓

1100-813-0040



# VERTICAL DONKEY BOILER—Manufacturers of Steel

No. \_\_\_\_\_ Description \_\_\_\_\_  
 Made at \_\_\_\_\_ By whom made \_\_\_\_\_  
 Working pressure \_\_\_\_\_ tested by hydraulic pressure to \_\_\_\_\_ Date of test \_\_\_\_\_ No. of Certificate \_\_\_\_\_ Where fixed \_\_\_\_\_  
 Valves \_\_\_\_\_ No. of Safety Valves \_\_\_\_\_ Area of each \_\_\_\_\_ Pressure to which they are adjusted \_\_\_\_\_ Fire grate area \_\_\_\_\_ Description of Safety \_\_\_\_\_  
 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 \_\_\_\_\_ Stayed by \_\_\_\_\_  
 Diameter of uptake \_\_\_\_\_ Thickness of uptake plates \_\_\_\_\_ Thickness of water tubes \_\_\_\_\_ Dates of survey \_\_\_\_\_

SPARE GEAR. State the articles supplied: *Two crosshead bolts, 2 connecting rod bottom end bolts, 2 Main bearing bolts, Disc coupling bolts, 1 set of feed and 1 set of bilge pump valves. A quantity of assorted bolts and Nuts and iron of various sizes.*

The foregoing is a correct description,

Manufacturer.

For DAY, SUMMERS & Co., Ltd.

*Samuel R. Day*

Dates of Survey while building  
 During progress of work in shops - *March 22-26 April 25-11-17-19-21-23-30 May 11-16-17-21-22-26 June 6-13-18-27*  
 During erection on board vessel - *July 3-5-10-15-18-21-23-25-28-30 Sept 8-13-15-18-19-21-26 Oct 9-19-24 Nov 2- Dec 7- Jan 7-1907*  
 Total No. of visits *144.*

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

Dates of Examination of principal parts—Cylinders *May 26-June 6* Slides *Aug 15-23* Covers *July 5-13-18* Pistons *Apr 17-19* Rods *Apr 21-24/16*  
 Connecting rods *Apr 21-24/16* Crank shaft *May 22-26* Thrust shaft *July 3-5* Tunnel shafts *Aug 21-22* Screw shaft *Aug 10* Propeller *Aug 31*  
 Stern tube *Aug 30* Steam pipes tested *Oct 3* Engine and boiler seatings *Sept 8-13-15* Engines holding down bolts *Sept 21*  
 Completion of pumping arrangements *Oct 19* Boilers fixed *Sept 21-26* Engines tried under steam *Oct 30*  
 Main boiler safety valves adjusted *Oct 30* Thickness of adjusting washers *3/16 each.*  
 Material of Crank shaft *iron* Identification Mark on Do. *J.D. 8-06* Material of Thrust shaft *iron* Identification Mark on Do. *J.D. 8-06*  
 Material of Tunnel shafts *iron* Identification Marks on Do. *J.D. 8-06* Material of Screw shafts *iron* Identification Marks on Do. *J.D. 8-06*  
 Material of Steam Pipes *Copper.* Test pressure *240 lbs per sq inch.*

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

*The Engines and Boiler of this Vessel have now been built under Special Survey and in accordance with the approved plans & Secretaries Letter 11/5/06. 15/5/06. 17/3/06. The Materials and workmanship are of a good quality and when tried under steam was found satisfactory in every respect, and is now in my opinion eligible for the Notification *L.M.C. 1-07* recorded in the Register Book.*

*It is submitted that this vessel is eligible for THE RECORD L.M.C. 1-07.*

*10.1.07*

The amount of Entry Fee. £ *1 : 0*  
 Special .. .. £ *8 : 0*  
 Donkey Boiler Fee .. .. £  
 Travelling Expenses (if any) £

When applied for *Dec 20 1906*  
 When received, *Dec 22 1906*

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

Committee's Minute *FRI. JAN 18 1907*

Assigned

MACHINERY CERTIFICATE WRITTEN.