

## REPORT ON MACHINERY.

No. 24693

Port of Sunderland

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No. in Survey held at SunderlandDate, first Survey 30 June 1910Last Survey 4 Jan 1911

Reg. Book.

on the Steel Screw Steamer "Kirkwood"(Number of Visits 24)Master MartinBuilt at SunderlandBy whom built R. Thompson & Son LtdGross 1674Net 1012When built 1911Engines made at SunderlandBy whom made L. S. Marine Eng Co Ltdwhen made 1911Boilers made at doBy whom made dowhen made 1911

Registered Horse Power

Owners Wm. Grace, Limited, LondonPort belonging to LondonNom. Horse Power as per Section 28 246Is Refrigerating Machinery fitted for cargo purposes doIs Electric Light fitted do

## ENGINES, &amp;c.—Description of Engines

No. of Cylinders ThreeNo. of Cranks ThreeDia. of Cylinders 21 1/2" 36" 59" Length of Stroke 39" Revs. per minute 73 Dia. of Screw shaft as per rule 12 1/2" Material of screw shaft SteelIs the screw shaft fitted with a continuous liner the whole length of the stern tube do Is the after end of the liner made water tight in the propeller boss do If the liner is in more than one length are the joints burned do 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 do If two liners are fitted, is the shaft lapped or protected between the liners do Length of stern bush 4' - 6 1/2"Dia. of Tunnel shaft as per rule 10 1/4" Dia. of Crank shaft journals as per rule 11 1/2" Dia. of Crank pin 11 1/2" Size of Crank webs 17 1/2" x 7" Dia. of thrust shaft under collars 11 1/2" Dia. of screw 14" - 6 Pitch of Screw 16" - 6 No. of Blades 4 State whether moveable do Total surface 68 sq ftNo. of Feed pumps 2 Diameter of ditto 3" Stroke 21" Can one be overhauled while the other is at work yesNo. of Bilge pumps 2 Diameter of ditto 3 1/2" Stroke 21" Can one be overhauled while the other is at work yesNo. of Donkey Engines Two Sizes of Pumps FEED 5 1/2" x 2 1/2" x 5 BALLAST 7 1/2" x 9 1/2" x 10 1/2" No. and size of Suctions connected to both Bilge and Donkey pumpsIn Engine Room Four 2 1/2" In Holds, &c. Two 2 1/2" in each 2 1/2" tunnelNo. of Bilge Injections 1 sizes 4" Connected to condenser, or to circulating pump Pump Is a separate Donkey Suction fitted in Engine room & size yes 2 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 doAre all connections with the sea direct on the skin of the ship yes Are they Valves or Cocks bothAre 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 aboveAre 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 yesWhat pipes are carried through the bunkers none How are they protected doAre all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times yesAre the Bilge Suction Pipes, Cocks, and Valves arranged so as to prevent any communication between the sea and the bilges yesDates of examination of completion of fitting of Sea Connections 28. 9. 10 of Stern Tube 28. 9. 10 Screw shaft and Propeller 28. 9. 10Is the Screw Shaft Tunnel watertight yes Is it fitted with a watertight door yes worked from Top platformBOILERS, &c.—(Letter for record do) Manufacturers of Steel J. Spencer & Son Ltd NewcastleTotal Heating Surface of Boilers 3922 Is Forced Draft fitted do No. and Description of Boilers Two 12" MultitubularWorking Pressure 180 lb Tested by hydraulic pressure to 360 lb Date of test 23. 9. 10 No. of Certificate 2862Can each boiler be worked separately yes Area of fire grate in each boiler 502 sq ft No. and Description of Safety Valves to each boiler Two direct spring Area of each valve 5.94 Pressure to which they are adjusted 185 lb Are they fitted with easing gear yesSmallest distance between boilers or uptakes and bunkers or woodwork 18" Mean dia. of boilers 14" - 3 1/2" Length 10' - 6" Material of shell plates SteelThickness 1 1/4" Range of tensile strength 28 1/2 - 32 Are the shell plates welded or flanged do Descrip. of riveting: cir. seams 5/8" deeplong. seam 5/8" deep Diameter of rivet holes in long. seams 1 1/2" Pitch of rivets 9 1/2" Lap of plates or width of butt straps 19 1/2"Per centages of strength of longitudinal joint 86.6 Working pressure of shell by rules 206 Size of manhole in shell 16" x 12"Size of compensating ring plate dished No. and Description of Furnaces in each boiler 3 Morrison Material Steel Outside diameter 43 1/2"Length of plain part top Thickness of plates bottom 32 Description of longitudinal joint weld No. of strengthening rings doWorking pressure of furnace by the rules 189 Combustion chamber plates: Material Steel Thickness: Sides 3/4" Back 3/4" Top 3/4" Bottom 3/4"Pitch of stays to ditto: Sides 8 1/2" x 8 1/2" Back 8 1/2" x 7 1/2" Top 8 1/2" x 8 1/2" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 226Material of stays Steel Diameter at smallest part 1.38 Area supported by each stay 660 Working pressure by rules 81 End plates in steam space: Material Steel Thickness 1 1/2" Pitch of stays 20 1/2" x 18 1/2" How are stays secured 5/8" x 1/2" Working pressure by rules 202 Material of stays SteelDiameter at smallest part 3.28 Area supported by each stay 3870 Working pressure by rules 230 Material of Front plates at bottom SteelThickness 3/4" Material of Lower back plate Steel Thickness 29 Greatest pitch of stays 15 1/2" x 7 1/2" Working pressure of plate by rules 182Diameter of tubes 3 1/2" Pitch of tubes 4 1/2" x 4 1/2" Material of tube plates Steel Thickness: Front 3/8" Back 1 1/2" Mean pitch of stays 9 x 9Pitch across wide water spaces 15" Working pressures by rules 284 Girders to Chamber tops: Material Steel Depth and thickness of girder at centre 8" x 1 1/2" Length as per rule 29 1/2" Distance apart 8 1/2" Number and pitch of stays in each Two 8 1/2"Working pressure by rules 214 Superheater or Steam chest; how connected to boiler do Can the superheater be shut off and the boiler worked separately do

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

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W1204-9189



# VERTICAL DONKEY BOILER—Manufacturers of Steel

No. \_\_\_\_\_ Description Attached

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 \_\_\_\_\_ Stayed by \_\_\_\_\_

Diameter of uptake \_\_\_\_\_ Thickness of uptake plates \_\_\_\_\_ Thickness of water tubes \_\_\_\_\_ Dates of survey \_\_\_\_\_

SPARE GEAR. State the articles supplied:— Propeller & shaft 2 each bolts & nuts for top & bottom ends & main bearings, set of coupling bolt & nuts valves for all pumps, bolts, nuts, & iron assorted condenser tubes &c.

The foregoing is a correct description,

Manufacturer.

Walter Beattie

Dates of Survey \_\_\_\_\_ During progress of work in shops— \_\_\_\_\_ During erection on board vessel— \_\_\_\_\_ while building \_\_\_\_\_ Total No. of visits \_\_\_\_\_

Is the approved plan of main boiler forwarded herewith yes ✓  
" " " donkey " " " yes ✓

Dates of Examination of principal parts—Cylinders 20-9-10 Slides 20-9-10 Covers 5-9-10 Pistons 5-9-10 Rods 23-9-10  
Connecting rods 23-9-10 Crank shaft 20-9-10 Thrust shaft 23-9-10 Tunnel shafts 9-9-10 Screw shaft 20-9-10 Propeller 23-9-10  
Stern tube 20-9-10 Steam pipes tested 5-12-10 Engine and boiler seatings 28-9-10 Engines holding down bolts 7-12-10  
Completion of pumping arrangements 9-12-10 Boilers fixed 7-12-10 Engines tried under steam 9-12-10  
Main boiler safety valves adjusted 9-12-10 Thickness of adjusting washers F<sub>2</sub> A<sub>16</sub> F<sub>16</sub> A<sub>16</sub>  
Material of Crank shaft Ident. Mark on Do. 1494 ATP Material of Thrust shaft Ident. Mark on Do. 1490 ATP  
Material of Tunnel shafts Ident. Marks on Do. 1491-2 1482 ATP 1515 AFO 1503 HS Material of Screw shafts Ident. Marks on Do. 1462-5 HS  
Material of Steam Pipes length 4 1/2' by 6" seamless copper Test pressure 400 lb.

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

The machinery of this vessel has been constructed under special survey, the material & workmanship found good & efficient, fitted & tested in accordance with the Rules & eligible in my opinion for classification with Record of + L.M.C. 1-11

The above machinery is a duplicate of that fitted on board the S.S. "Hedgewood" Reg. No. 24597

It is submitted that this vessel is eligible for THE RECORD. + L.M.C. 1-11.

J. R. Stoddart  
J. W. D.

The amount of Entry Fee. . . £ 2 : 0 : \_\_\_\_\_ When applied for, \_\_\_\_\_  
Special . . . . . £ 32 : 6 : \_\_\_\_\_  
Donkey Boiler Fee . . . . . £ : : \_\_\_\_\_ When received, \_\_\_\_\_  
Travelling Expenses (if any) £ : : \_\_\_\_\_ 13/11/1911

Committee's Minute

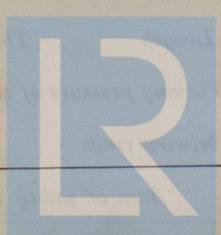
FRI. 13 JAN 1911

Assigned

+ L.M.C. 1-11

J. R. Stoddart

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



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