

# REPORT ON MACHINERY.

WED. APR. 23 1913

Received at London Office

Date of writing Report 19 When handed in at Local Office 19.4.13 Port of Sunderland

No. in Survey held at SUNDERLAND. Date, First Survey 25 Oct. Last Survey 15 April 1913

Reg. Book. on the 3/3. Dingle Bank. (Number of Visits 3) Tons Gross 3130 Net 1940

Master Kerr Built at Sunderland By whom built Blumer & Co. When built 1913

Engines made at Island. By whom made J. Dickinson & Sons Ltd when made 1913

Boilers made at " By whom made " when made 1913.

Registered Horse Power Owners Stewart Esplan Ltd. Port belonging to Liverpool

Nom. Horse Power as per Section 28 303 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted no.

**ENGINES, &c.**—Description of Engines *Tri C.P.D.* No. of Cylinders 3 No. of Cranks 3

Dia. of Cylinders 24.39.65 Length of Stroke 42 Revs. per minute 70 Dia. of Screw shaft as per rule 13.38 Material of screw shaft as fitted 13.38 W. I.

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 4' 6"

Dia. of Tunnel shaft as per rule 11.78 Dia. of Crank shaft journals as per rule 12.36 Dia. of Crank pin 12 3/8 Size of Crank webs *patent* Dia. of thrust shaft under collars 12 3/8 Dia. of screw 16 6" Pitch of Screw 16 St. No. of Blades 4 State whether moveable *no* Total surface 80 f

No. of Feed pumps 2 Diameter of ditto 34 Stroke 21 Can one be overhauled while the other is at work *yes*

No. of Bilge pumps 2 Diameter of ditto 4 Stroke 21 Can one be overhauled while the other is at work *yes*

No. of Donkey Engines 2 Sizes of Pumps 4 x 6 1/2 7 9 10 No. and size of Suctions connected to both Bilge and Donkey pumps In Engine Room 4 of 3" In Holds, &c. *two of 3" in each*

No. of Bilge Injections 1 sizes 4 Connected to condenser, or to circulating pump *C.P.* Is a separate Donkey Suction fitted in Engine room & size *yes 4*

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 *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 28.2.13 of Stern Tube 13.3.13 Screw shaft and Propeller 26.3.13

Is the Screw Shaft Tunnel watertight *yes* Is it fitted with a watertight door *yes* worked from *top platform*

**BOILERS, &c.**—(Letter for record *S*) Manufacturers of Steel *J. Spencer & Sons Ltd*

Total Heating Surface of Boilers 4736 f Is Forced Draft fitted *no* No. and Description of Boilers *two Marine type*

Working Pressure 180 lbs Tested by hydraulic pressure to 360 lbs Date of test 13.3.13 No. of Certificate 3096

Can each boiler be worked separately *yes* Area of fire grate in each boiler 65 f No. and Description of Safety Valves to each boiler *two spring* Area of each valve 8.3 Pressure to which they are adjusted 185 Are they fitted with easing gear *yes*

Smallest distance between boilers or uptakes and bunkers or woodwork 1' 8" Mean dia. of boilers 16'-0" Length 11' 0" Material of shell plates *S*

Thickness 1 1/4" Range of tensile strength 28 1/2 - 32 Are the shell plates welded or flanged *no* Descrip. of riveting: cir. seams *a. r. lap*

long. seams *L. r. a. B. S* Diameter of rivet holes in long. seams 1 3/8" Pitch of rivets 9 5/8" Lap of plates or width of butt straps 1' 7/8"

Per centages of strength of longitudinal joint rivets 96.8 plate 8.5 Working pressure of shell by rules 180 lbs Size of manhole in shell 16" x 12"

Size of compensating ring 8 3/4 x 14 No. and Description of Furnaces in each boiler *3 Dighton Cornucopia* Material *S* Outside diameter 4' 2"

Length of plain part top 9 bottom 9 Thickness of plates crown 19 bottom 32 Description of longitudinal joint *weld* No. of strengthening rings *✓*

Working pressure of furnace by the rules 189 lbs Combustion chamber plates: Material *S* Thickness: Sides 1/8" Back 1/8" Top 1/8" Bottom 1/8"

Pitch of stays to ditto: Sides 10 3/4 x 8 3/4 Back 10 3/4 x 8 Top 9 1/2 x 9 If stays are fitted with nuts or riveted heads *nuts* Working pressure by rules 191

Material of stays *S* Diameter at smallest part 1.6 Area supported by each stay 85 1/2 Working pressure by rules 185 End plates in steam space: Material *S* Thickness 1 3/2 Pitch of stays 18 x 21 How are stays secured *a nut* Working pressure by rules 184 Material of stays *S*

Diameter at smallest part 2.92 Area supported by each stay 378 Working pressure by rules 184 Material of Front plates at bottom *S*

Thickness 1/8" Material of Lower back plate *S* Thickness 3/32 Greatest pitch of stays 14 x 8 Working pressure of plate by rules 189

Diameter of tubes 3 3/4 Pitch of tubes 4 1/2, 4 1/2 Material of tube plates *S* Thickness: Front 1/8" Back 1/8" Mean pitch of stays 9 x 9"

Pitch across wide water spaces 1' 2 1/4 Working pressures by rules 249 lbs Girders to Chamber tops: Material *S* Depth and thickness of girder at centre 6 3/8 x 1 3/4 + 2 Length as per rule 2 7/2 Distance apart 9 Number and pitch of stays in each 2 @ 9 1/2

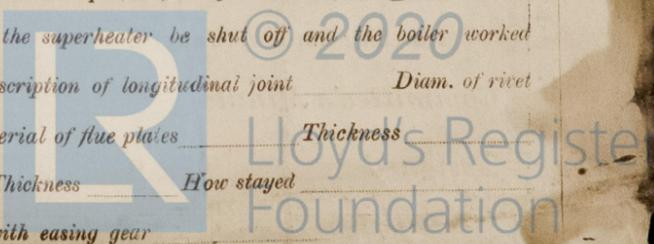
Working pressure by rules 187 lbs Superheater or Steam chest; how connected to boiler *✓* Can the superheater be shut off and the boiler worked separately Diameter Length Thickness of shell plates Material Description of longitudinal joint Diam. of rivet holes Pitch of rivets Working pressure of shell 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

If not, state whether, and when, one will be sent. Is a Report also sent on the Hull of the Ship?

W1358-0006



**VERTICAL DONKEY BOILER—** Manufacturers of Steel

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

Made at \_\_\_\_\_ By whom made \_\_\_\_\_ When made \_\_\_\_\_ Where fired \_\_\_\_\_

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:— Propeller, set coupling bolts & nuts, two main bearing bolts & nuts, two top & bottom end bolts & nuts, set of feed & bilge pump valves, set air & air pump valves, two feed, check valves, two feed (donkey) & two ballast donkey valves, two safety & two escape valve springs, nuts bolts & assorted iron fittings.

The foregoing is a correct description,  
 John D. ... Sons, Limited, Manufacturer.

Dates of Survey while building

During progress of work in shops	1912. Oct. 25. Nov. 1. 5. 29. Dec. 9. 12. 17. 19. 31. Jan. 10. 20. 23. 30. 31. Feb. 5. 6. 7. 12. 28
During erection on board vessel	Mar. 3. 6. 10. 12. 13. 14. 20. 21. 24. 26. 27. 28. Apr. 1. 2. 3. 11. 15
Total No. of visits	(36)

Is the approved plan of main boiler forwarded herewith **Yes** ✓

Is the approved plan of donkey boiler forwarded herewith \_\_\_\_\_

Dates of Examination of principal parts—Cylinders 22.1.13 Slides 12.2.13 Covers 12.2.13 Pistons 12.2.13 Rods 12.2.13

Connecting rods 12.2.13 Crank shaft 10.3.13 Thrust shaft 28.2.13 Tunnel shafts 28.2.13 Screw shaft 28.2.13 Propeller 28.2.13

Stern tube 2.3.13 Steam pipes tested 20.3.13 Engine and boiler seatings 22.3.13 Engines holding down bolts 26.3.13

Completion of pumping arrangements 1.4.13 Boilers fixed 26.3.13 Engines tried under steam 28.3.13

Main boiler safety valves adjusted 28.3.13 Thickness of adjusting washers PB f 7/32 a 7/32 SB f 4/32 a 7/32

Material of Crank shaft Steel Identification Mark on Do. 2008 HB Material of Thrust shaft Steel Identification Mark on Do. HB 2296

Material of Tunnel shafts Steel Identification Marks on Do. 2368, 9, 478, 113 Material of Screw shafts S Identification Marks on Do. R, J, F

Material of Steam Pipes Copper ✓ Test pressure 100 lbs ✓

**General Remarks** (State quality of workmanship, opinions as to class, &c. Engines & boilers built under) Special survey: Materials and workmanship good. Engines & boilers examined under full steam & found satisfactory.

It is submitted that this vessel is worthy of the consideration of the Committee for the record of L.M.C. 4.13 in the Register Book.

It is submitted that this vessel is eligible for 2008 25000 + L.M.C. 4.13.

J.W.D. 23/4/13. G.P.R.

Certificate (if required) to be sent to the Registrar of Shipping or to the Registrar of the Committee's Minutes.

The amount of Entry Fee .. £ 0 : - : -	When applied for, 21.4.13
Special .. .. £ 25 : 3 : -	
Donkey Boiler Fee .. .. £ : : -	When received, 23.4.13
Travelling Expenses (if any) £ : : -	

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

Committee's Minute  
 Assigned  
 FRI. APR. 25. 1913  
 H.M.C. 4.13

