

## REPORT ON MACHINERY.

No. 16497

Received at London Office

WED. JUL. 2-1913

Date of writing Report

10

When handed in at Local Office

27/6/1913 Port of Greenock

No. in Survey held at Greenock.  
Reg. Book.

Date, First Survey

4<sup>th</sup> Dec. 1911.

Last Survey

26<sup>th</sup> June 1913.

(Number of Visits 101)

Gross 4722

Tons Net 2897

on the SCREW STEAMER "UNCAS".

Master P. Stewart Built at Greenock

By whom built Greenock Engineering Co. When built 1913

Engines made at Greenock

By whom made Rankin &amp; Blackmore

when made 1913

Boilers made at Greenock

By whom made Rankin &amp; Blackmore

when made 1913.

Registered Horse Power

Owners Tank Storage &amp; Carriage Co. Ltd. Port belonging to Greenock.

Nom. Horse Power as per Section 28 440.

Is Refrigerating Machinery fitted for cargo purposes No.

Is Electric Light fitted Yes.

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

Triple Expansion

No. of Cylinders Three

No. of Cranks Three

Dia. of Cylinders 24 44 40

Length of Stroke 48

Revs. per minute 68

Dia. of Screw shaft

as per rule 14 8

Material of

screw shaft Steel

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 one length 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 5' 6"

Dia. of Tunnel shaft

as per rule 13 28

Dia. of Crank shaft journals

as per rule 13 28

Dia. of Crank pin 14 2

Size of Crank webs 19 4 x 9

Dia. of thrust shaft under

collars 14 4

Dia. of screw 18 0

Pitch of Screw 17 3

No. of Blades 4

State whether moveable No.

Total surface 105 sq. ft.

No. of Feed pumps 2

Diameter of ditto 4

Stroke 26

Can one be overhauled while the other is at work Yes.

WEIRS FEED PUMP

10 2 x 8 x 21

No. of Bilge pumps 2

Diameter of ditto 4 2

Stroke 26

Can one be overhauled while the other is at work Yes.

No. of Donkey Engines Three

Sizes of Pumps 4 x 5 x 8, 6 x 4 x 6, 8 x 8 x 8

No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room Three 3 2 dia.

In Holds, &amp;c. Hold 1-2 dia. from Cofferdam 1-2 dia.

Pump Room 1-2 dia.

No. of Bilge Injections 1

sizes 8 2

Connected to condenser, or to circulating pump C.P.

Is a separate Donkey Suction fitted in Engine room &amp; size Yes. 3 2 dia.

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 17/4/13

of Stern Tube 17/4/13

Screw shaft and Propeller 29/4/13.

Is the Screw Shaft Tunnel watertight None.

Is it fitted with a watertight door

worked from

## BOILERS, &amp;c.—(Letter for record

(7)

Manufacturers of Steel

W. Beardmore &amp; Co. Ltd.

Total Heating Surface of Boilers 8202

Is Forced Draft fitted No.

No. and Description of Boilers 3 Cylinders, Single.

Working Pressure 180 lb

Tested by hydraulic pressure to 360 lb

Date of test 21/4/13

No. of Certificate 1107 &amp; 1109.

Can each boiler be worked separately Yes.

Area of fire grate in each boiler 65 sq. ft.

No. and Description of Safety Valves to

each boiler 2: One Spring Loaded

Area of each valve 8 29

Pressure to which they are adjusted 185 lb

Are they fitted with easing gear Yes.

Smallest distance between boilers or uptakes and bunkers or woodwork

about 27

Mean dia. of boilers 16 3

Length 12 0

Material of shell plates Steel

Thickness 1 3 2

Range of tensile strength 28 to 32 tons

Are the shell plates welded or flanged No.

Descrip. of riveting: cir. seams Lap Double

long. seams 8 3 Straps

Diameter of rivet holes in long. seams 1 3 2

Pitch of rivets 9 2

4 7 8

Lap of plates or width of butt straps 20 2

Per centages of strength of longitudinal joint

rivets 86 2

plate 86

Working pressure of shell by rules 180 lb

Size of manhole in shell 16 x 12

Size of compensating ring 20 2 x 26 2 x 1 3 2

No. and Description of Furnaces in each boiler 3: Doughtons

Material Steel

Outside diameter 50 2

Length of plain part

top 19 3 2

Thickness of plates

crown 19 3 2

bottom 19 3 2

Description of longitudinal joint Weld.

No. of strengthening rings None.

Working pressure of furnace by the rules 184 lb

Combustion chamber plates: Material Steel

Thickness: Sides 3 4

Back 8

Top 4 1

Bottom 15 4

Pitch of stays to ditto: Sides 9 2 x 8

Back 8 2 x 8 2

Top 8 2 x 8 2

If stays are fitted with nuts or riveted heads

None.

Working pressure by rules 185 lb

Material of stays Sp. Iron

Diameter at smallest part 1 5 8

Area supported by each stay 37 2

Working pressure by rules 245 lb

End plates in steam space:

Material Steel

Thickness 1 7 6

Pitch of stays 20 8 x 16 2

How are stays secured All nuts

Working pressure by rules 181 lb

Material of stays Steel

Diameter at smallest part 3 7 6

Area supported by each stay 34 2

Working pressure by rules 244 lb

Material of Front plates at bottom Steel

Thickness 1 7 6

Material of Lower back plate Steel

Thickness 3 4

Greatest pitch of stays 12 2

Working pressure of plate by rules 207 lb

Diameter of tubes 3 4

Pitch of tubes 4 2 x 4 7 6

Material of tube plates Steel

Thickness: Front 3 4

Back 3 4

Mean pitch of stays 9 7 6

Pitch across wide water spaces 13 2

Working pressures by rules 189 lb

Girders to Chamber tops: Material Steel

Depth and

thickness of girder at centre 10 2 x 12

Length as per rule 37 8

Distance apart 8 2

Number and pitch of stays in each 3: 8 2 4

Working pressure by rules 186 lb

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

Diam. of rivet

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

Diam. of rivet

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

Diam. of rivet

Thickness

002883-002890-0227

Lloyd's Register  
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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:— 1 Propeller, 1 Propeller shaft & nut, 1 set Rings for H.P. Piston valves, 1 set Springs for H.P. Piston, 6 Valves seats for General Donkey, 6 plates for Ballast pump, 2 Safety & Escape valve Springs, 1 set Ball & Ball Packing for H.P. Rod & Spindle, 2 Feed Escape valve Springs, 2 D. Rods & Check valves, 1 set Spare Gear for Main pump, 12 Piston Sticks & nuts, 1 SP Slide Spindles & saddle block, 1 set Crank pin bushes, 1 Pair Crosshead Bushes, 1 Air Pump Bushes & Rod, 1 set Air pump valves, 2 Condenser tubes, 100 Condenser formers, 1 Eccentric shaft & strap, 26 Boiler tubes, 6 Joint Ring Bolts, 1 set Spare gear for Centrifugal pump, 2 set valves for D. Rods & Feed pump, 1 Thrust Block shoe, 1 set White metal, 6 Holding down Bolts, 12 Cylinders cover studs, 6 valve check cover studs, 2 main feed check valves and list of spare gear required by the Rules.

The foregoing is a correct description,

*James Mathew*

Manufacturers

Dates of Survey while building	During progress of work in shops --	1911. Dec. 4. 6. 11. 15. 21. 28. 1912. Jan. 15. 18. 25. 29. Febr. 2. 7. 13. 16. 21. 27. Mar. 5. 11. 14. 20. 25.
	During erection on board vessel --	April 1. 4. 8. 11. 17. 19. 24. May. 8. 15. 17. 21. 24. 27. June 5. 10. 14. 19. 26. July 1. 28. 30. Aug. 5. 14. 20.
	Total No. of visits	101
	Is the approved plan of main boiler forwarded herewith	Yes. ✓

Dates of Examination of principal parts—	Cylinders 29/1/12	Slides 5/6/12	Covers 23/6/13	Pistons 20/5/12	Rods 1/4/12
Connecting rods 1/4/12	Crank shaft 22/6/12	Thrust shaft 29/1/12	Tunnel shafts 29/1/12	Screw shaft 10/4/12	Propeller 10/4/12
Stern tube 5/6/12	Steam pipes tested at Glasgow.	Engine and boiler seatings 17/4/12	Engines holding down bolts 19/6/12.		
Completion of pumping arrangements 19/6/13	Boilers fixed 23/6/13	Engines tried under steam 23/6/13.			
Main boiler safety valves adjusted 17/6/12.	Thickness of adjusting washers	SB. 1 1/2 x 1 1/2. PE. 1 1/2 x 1 1/2. Forw. B. 1 1/2 x 1 1/2. D.K. 1 1/2 x 1 1/2. A.V. 3/2.			
Material of Crank shaft Steel	Identification Mark on Do. 2685.	Material of Thrust shaft Steel	Identification Mark on Do. 1183.		
Material of Tunnel shafts Steel	Identification Marks on Do. 1184	Material of Screw shafts Steel	Identification Marks on Do. 1185.		
Material of Steam Pipes	Wrot. Iron ✓	Test pressure	540 lbs. ✓		

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

The Engines and Boilers of this vessel were built under Special Survey and the materials and workmanship are good. On completion they underwent a full power trial in the Firth and were found to work satisfactorily.

The machinery throughout is now in good and efficient condition and eligible in my opinion to have the record of **LMC. 6, 13.** marked in the Society's Register Book.

It is submitted that  
this vessel is eligible for  
THE RECORD. + LMC 6.13.

The amount of Entry Fee .. £ 3 : :	When applied for,
Special .. £ 40 : 10 :	23/6/13
Donkey Boiler Fee .. £ :	When received,
Travelling Expenses (if any) £ :	30/5/13

Committee's Minute GLASGOW 1- JUL 1913

Assigned + L.M.C. 6,13.

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



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