

## REPORT ON MACHINERY.

No. 22948

Port of SunderlandReceived at London Office THUR. 20 SEP 1906No. in Survey held at Sunderland  
Reg. Book.Date, first Survey 22<sup>nd</sup> May. 06 Last Survey 12 September 1906(Number of Visits 2 H.)on the Steel Screw Steamer "Cedargrove"Master J. R. Small Built at Sunderland By whom built R. Thompson & SonsGross 2518.49Net 1496.93When built 1906Engines made at SunderlandBy whom made G. Clark & Co.when made 06Boilers made at 06By whom made 06when made 06

Registered Horse Power

Owners The Steamship Mary Ltd.Port belonging to GlasgowNom. Horse Power as per Section 28 229Is Refrigerating Machinery fitted for cargo purposes NoIs Electric Light fitted No

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

Vertical Single Expansion in surface condenser fitted with anti-backNo. of Cylinders TwoNo. of Cranks TwoDia. of Cylinders 21 1/2 - 26 - 59Length of Stroke 39Revs. per minute 65

Dia. of Screw shaft

as per rule 12 3/4Material of Y.M. SuperIs 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 Yes

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 Yes

If two

liners are fitted, is the shaft lapped or protected between the liners YesLength of stern bush 4-2 1/2

Dia. of Tunnel shaft

as per rule 10 1/2

Dia. of Crank shaft journals

as per rule 11 1/2Dia. of Crank pin 11 1/2Size of Crank webs 8 x 14

Dia. of thrust shaft under

collars 12 1/4Dia. of screw 15 - 4 1/2Pitch of Screw 16 - 3No. of Blades 4State whether moveable NoTotal surface 4.5No. of Feed pumps TwoDiameter of ditto 2 1/2Stroke 25Can one be overhauled while the other is at work YesNo. of Bilge pumps TwoDiameter of ditto 4 1/4Stroke 25Can one be overhauled while the other is at work YesNo. of Donkey Engines TwoSizes of Pumps 8 x 8 x 86 x 4 x 6

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

In Engine Room Four 3" dia.In Holds, &c. Two in each 3" dia. Summit well 3" dia.No. of Bilge Injections 1sizes 4Connected to condenser to circulating pump YesIs a separate Donkey Suction fitted in Engine room & size Yes 4"Are all the bilge suction pipes fitted with roses YesAre the roses in Engine room always accessible YesAre the sluices on Engine room bulkheads always accessible NoneAre all connections with the sea direct on the skin of the ship YesAre they Valves or Cocks BothAre they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates YesAre 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 YesAre the Blow Off Cocks fitted with a spigot and brass covering plate YesWhat pipes are carried through the bunkers NoneHow are they protected —Are 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 2.8.06of Stern Tube 9.8.06Screw shaft and Propeller 24.8.06Is the Screw Shaft Tunnel watertight YesIs it fitted with a watertight door Yesworked from Top platformBOILERS, &c.—(Letter for record S.)Manufacturers of Steel J. Spencer & Sons Ltd. Newcastle Steel WorksTotal Heating Surface of Boilers 3432 sq ftIs Forced Draft fitted NoNo. and Description of Boilers Two single ended horizontal tubularWorking Pressure 180 lbTested by hydraulic pressure to 360 lbDate of test 18.8.06No. of Certificate 2513Can each boiler be worked separately YesArea of fire grate in each boiler 53 sq ft

No. and Description of Safety Valves to

each boiler Two direct springArea of each valve 7.04 sq inPressure to which they are adjusted 185 lbAre they fitted with easing gear YesSmallest distance between boilers or uptakes and bunkers or woodwork 15"Mean dia. of boilers 13 - 6 1/2Length 10 - 6Material of shell plates SteelThickness 1 3/32Range of tensile strength 28 1/2 to 32Are the shell plates welded or flanged NoDescrip. of riveting: cir. seams Top DR.long. seams DBS TRSDiameter of rivet holes in long. seams 1 1/8Pitch of rivets 8"Lap of plates on width of butt straps 17 1/2

Per centages of strength of longitudinal joint

rivets 94plate 88Working pressure of shell by rules 181Size of manhole in shell Sid 16 x 13Size of compensating ring Not fittedNo. and Description of Furnaces in each boiler Three PlainMaterial SteelOutside diameter 42"

Length of plain part

top 76 1/2

Thickness of plates

crown 49Description of longitudinal joint WeldedNo. of strengthening rings SeeWorking pressure of furnace by the rules 182Combustion chamber plates: Material SteelThickness: Sides 1 1/8Back 22 x 23Top 3Bottom 1Pitch of stays to ditto: Sides 9 1/2 x 9 1/2Back 9 x 10 1/2Top —If stays are fitted with nuts or riveted heads NoneWorking pressure by rules 180Material of stays SteelDiameter at smallest part 1 1/2Area supported by each stay 90 x 98Working pressure by rules 180 lb

End plates in steam space:

Material SteelThickness 1 1/8Pitch of stays 18 x 23 x 19How are stays secured By nutsWorking pressure by rules 184Material of stays SteelDiameter at smallest part 2 1/8Area supported by each stay 390 sq inWorking pressure by rules 183Material of Front plates at bottom SteelThickness 1 3/16Material of Lower back plate SteelThickness 5/8Greatest pitch of stays 15 1/4Working pressure of plate by rules 187Diameter of tubes 3 1/2Pitch of tubes 4 1/2 x 4 1/2Material of tube plates SteelThickness: Front 1 1/8Back 3/4Mean pitch of stays 10.25"Pitch across wide water spaces 4 1/4Working pressures by rules 276 lbGirders to Chamber tops: Material Steel

Depth and

thickness of girder at centre 7 1/4 x 15 1/2 x 12

Length as per rule

Distance apart

Working pressure by rules

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

Working pressure of end plates

Area of safety valves to superheater

Are they fitted with easing gear

Working pressure of end plates

Area of safety valves to superheater

Are they fitted with easing gear

Working pressure of end plates

Area of safety valves to superheater

W438-0008



# 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 Saf
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. 1 each bolt & nuts for top & bottom ends & main bearings, set of Coupling bolts. valves for all pumps piston rings & pumps, bolts, nuts, wire etc.*

The foregoing is a correct description,

FOR GEORGE CLARK LIMITED.

*James C. Clark*

Manufacturer of main engines & boilers only

Dates of Survey while building  
During progress of work in shops— 1906 May 22, 30, June 13, 15, 26, July 6, 9, 18, 23, 26, 27, Aug 1, 9, 13, 15, 17, 18, 21, 24, 28, 29, Sept 6  
During erection on board vessel—  
Total No. of visits 24

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

Dates of Examination of principal parts—Cylinders 15.6.06 27.7.06	Slides 28.06	Covers 15.8.06	Pistons 13.8.06	Rods 13.8.06
Connecting rods 30.5.06	Crank shaft 23.7.06	Thrust shaft 28.06	Tunnel shafts 18.7.06	Screw shaft 15.8.06 27.8.06
Stern tube 2.8.06	Steam pipes tested 28.8.06	Engine and boiler seatings 21.8.06 6.9.06	Engines holding down bolts 24.8.06 6.9.06	
Completion of pumping arrangements 19.8.06	Boilers fixed 6.9.06	Engines tried under steam 7.9.06		
Main boiler safety valves adjusted 4.9.06	Thickness of adjusting washers	PORT 5 1/2" STARBOARD 5 1/2"		
Material of Crank shaft S.M.I. Steel Identification Mark on Do. 3416 2810 MK EJS	Material of Thrust shafts S.M.I. Steel Identification Mark on Do. 3485 MK			
Material of Tunnel shafts do Identification Marks on Do 3898 9. KH 522.3. PA	Material of Screw shafts do Identification Marks on Do. 1903 38 AM E			
Material of Steam Pipes Brazen Copper, 4 lengths 4 1/2" dia 55ins. Test pressure 400lb				

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, fitted & tested in accordance with the rules, & eligible in my opinion for classification with record of + L.M.C. 9.06.*

It is submitted that this vessel is eligible for THE RECORD

L.M.C. 9.06

*20.9.06*  
*20.9.06*

The amount of Entry Fee..	£ 2 :	When applied for.
Special ..	£ 31. 9 :	19.9.1906
Donkey Boiler Fee ..	£ :	When received.
Travelling Expenses (if any) £	:	22.9.06

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

Committee's Minute FRI. 21 SEP 1906

Assigned

MACHINERY CERTIFICATE WRITTEN.



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