

REPORT ON MACHINERY.

No. 22948

Port of Sunderland

Received at London Office **THUR. 20 SEP 1906**

No. in Survey held at Sunderland Date, first Survey 22nd May. 06 Last Survey 12th September 1906
 Reg. Book. on the Steel Screw Steamer Cedargrove (Number of Visits 2 H.)
 Master J. R. Small Built at Sunderland By whom built R. Thompson & Co
 Engines made at Sunderland By whom made G. Clark & Co when made 06
 Boilers made at 06 By whom made 06 when made 06
 Registered Horse Power 229 Owners The Steamship Mary Ltd. Port belonging to Glasgow
 Nom. Horse Power as per Section 28 229 Is Refrigerating Machinery fitted for cargo purposes 06 Is Electric Light fitted 06

ENGINES, &c.—Description of Engines Vertical Triple Expansion in surface condenser fitted with airlocks No. of Cylinders Three No. of Cranks Three
 Dia. of Cylinders 21 1/2 - 26 - 59 Length of Stroke 39 Revs. per minute 65 Dia. of Screw shaft 12 3/4 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 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 Yes Length of stern bush 4-2 1/2
 Dia. of Tunnel shaft 10 3/4 Dia. of Crank shaft journals 11 1/2 Dia. of Crank pin 11 1/2 Size of Crank webs 8 x 17 Dia. of thrust shaft under collars 12 1/4 Dia. of screw 15-4 1/2 Pitch of Screw 16-3 No. of Blades 4 State whether moveable 06 Total surface 4 1/2
 No. of Feed pumps Two Diameter of ditto 2 1/2 Stroke 25 Can one be overhauled while the other is at work Yes
 No. of Bilge pumps Two Diameter of ditto 4 1/4 Stroke 25 Can one be overhauled while the other is at work Yes
 No. of Donkey Engines Two Sizes of Pumps 8 x 8 x 8 6 x 4 x 6 No. and size of Suctions connected to both Bilge and Donkey pumps 06
 In Engine Room Four 3 dia In Holds, &c. Two in each 3 dia. Summit all 3 dia.
 No. of Bilge Injections 1 sizes 4 Connected to condenser to circulating pump Yes 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 06
 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 06
 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 06 How are they protected 06
 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 2.8.06 of Stern Tube 9.8.06 Screw shaft and Propeller 24.8.06
 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. Spence & Sons Ltd. Newcastle Steel Works
 Total Heating Surface of Boilers 3432 sq ft Is Forced Draft fitted 06 No. and Description of Boilers Two Single Ended horizontal tubular
 Working Pressure 180 lb Tested by hydraulic pressure to 360 lb Date of test 18.8.06 No. of Certificate 2513
 Can each boiler be worked separately Yes Area of fire grate in each boiler 53 sq ft No. and Description of Safety Valves to each boiler Two direct spring Area of each valve 7.07 sq ft 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 15 Mean dia. of boilers 13-6 1/2 Length 10-6 Material of shell plates Steel
 Thickness 1 3/32 Range of tensile strength 28 1/2 to 32 Are the shell plates welded or flanged 06 Descrip. of riveting: cir. seams Top DR
 long. seams DBS TR Sp Diameter of rivet holes in long. seams 1 3/16 Pitch of rivets 8 Lap of plates on width of butt straps 1 1/2
 Per centages of strength of longitudinal joint 94 Working pressure of shell by rules 181 Size of manhole in shell 16 x 13
 Size of compensating ring Not fitted No. and Description of Furnaces in each boiler Three Plain Material Steel Outside diameter 42
 Length of plain part 76 1/2 Thickness of plates 59 Description of longitudinal joint Welded No. of strengthening rings 06
 Working pressure of furnace by the rules 182 Combustion chamber plates: Material Steel Thickness: Sides 1/16 Back 22+23 Top 3/4 Bottom 1
 Pitch of stays to ditto: Sides 9 1/2 x 9 1/2 Back 9 x 10 1/2 Top 06 If stays are fitted with nuts or riveted heads 06 Working pressure by rules 180
 Material of stays Steel Diameter at smallest part 1 19/32 Area supported by each stay 90 x 98 Working pressure by rules 180 lb End plates in steam space: Material Steel Thickness 1 1/4 Pitch of stays 18+23 x 19 How are stays secured Nuts Working pressure by rules 184 Material of stays Steel
 Diameter at smallest part 2 9/16 Area supported by each stay 390 sq in Working pressure by rules 183 Material of Front plates at bottom Steel
 Thickness 13/16 Material of Lower back plate Steel Thickness 59 Greatest pitch of stays 15 1/4 Working pressure of plate by rules 187
 Diameter of tubes 3 1/2 Pitch of tubes 4 1/2 x 4 1/2 Material of tube plates Steel Thickness: Front 13/16 Back 3/4 Mean pitch of stays 10.25
 Pitch across wide water spaces 14 1/4 Working pressures by rules 276 lb Girders to Chamber tops: Material Steel Depth and thickness of girder at centre 9 3/4 x 15 1/2 x 1 1/2 Length as per rule 06 Distance apart 06 Number and pitch of stays in each 06
 Working pressure by rules 06 Superheater or Steam chest; how connected to boiler 06 Can the superheater be shut off and the boiler worked separately 06 Diameter 06 Length 06 Thickness of shell plates 06 Material 06 Description of longitudinal joint 06 Diam. of rivet holes 06 Pitch of rivets 06 Working pressure of shell by rules 06 Diameter of flue 06 Material of flue plates 06 Thickness 06
 If stiffened with rings 06 Distance between rings 06 Working pressure by rules 06 End plates: Thickness 06 How stayed 06
 Working pressure of end plates 06 Area of safety valves to superheater 06 Are they fitted with easing gear 06

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 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. 1 each bolts & nuts for tops & bottoms ends & main bearings, set of Coupling bolts. valves for all pumps pistons & springs, 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 *Yes*
 " " " donkey " " " *No*
 Dates of Examination of principal parts—Cylinders *15.6.06* Slides *27.7.06* Covers *9.8.06* Pistons *15.8.06* Rods *17.8.06*
 Connecting rods *30.5.06* Crank shaft *23.7.06* Thrust shafts *2.8.06* Tunnel shafts *18.7.06* Screw shaft *15.8.06* Propeller *15.8.06*
 Stern tube *2.8.06* Steam pipes tested *28.8.06* Engine and boiler seatings *2.8.06* Engines holding down bolts *24.8.06*
 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 2 1/2" 5/16" STARBOARD 2 1/2" 5/16"*
 Material of Crank shaft *S.M.I. Steel* Identification Mark on Do. *3416 281C MK ETS* 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 502.3. PA* Material of Screw shafts *do* Identification Marks on Do. *1903 38 AM E*
 Material of Steam Pipes *Brazed Copper, 4 lengths 4 1/2" dia 5500g* 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

J.L. 20.9.06
M.S. 20.9.06

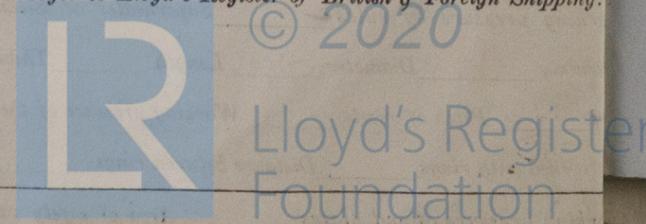
The amount of Entry Fee.. £ 2 : :
 Special .. £ 31. 9 : :
 Donkey Boiler Fee .. £ : :
 Travelling Expenses (if any) £ : :
 When applied for, 19.9.1906
 When received, 22.9.06

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

Committee's Minute FRI. 21 SEP 1906

Assigned + LMB 9.06

MACHINERY CERTIFICATE WRITTEN.



Certificate (if required) to be sent to the Surveyors as requested not to write on or below the space for Committee's Minute.