

REPORT ON MACHINERY.

No. 18701

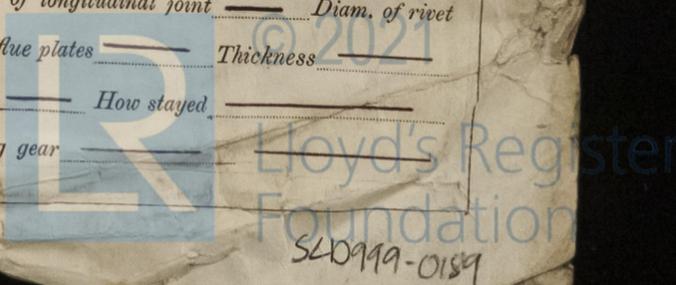
Port of Sunderland

THUR. MAR 26 1896

No. in Survey held at Sunderland Date, first Survey Nov Received at London Office
 Reg. Book. Last Survey March 23 1896
 on the S/S. "Umtali" (Number of Visits 22)
 Master H. Clark Built at Sland By whom built J. Rainey Tons { Gross 2627
 Engines made at Sland By whom made G. Clark Ltd Net 1665
 Boilers made at Sland By whom made G. Clark Ltd When built 1896
 Registered Horse Power 450 Owners Bullard King & Co when made 1896
 Nom. Horse Power as per Section 28 379 Port belonging to London

ENGINES, &c. — Description of Engines Tri compound No. of Cylinders 3
 Diameter of Cylinders 25" 41 1/2" 68" Length of Stroke 45" Revolutions per minute 70 Diameter of Screw shaft as per rule 12 5/16
 Diameter of Tunnel shaft as per rule 11 1/16 Diameter of Crank shaft journals 13 Diameter of Crank pin 14" Size of Crank webs 20" x 9 1/8"
 Diameter of screw 16-2" Pitch of screw 19 feet No. of blades 4 State whether moveable f Total surface 75 f
 No. of Feed pumps 2 Diameter of ditto 3 1/2 Stroke 24" Can one be overhauled while the other is at work yes
 No. of Bilge pumps 2 Diameter of ditto 4 3/8 Stroke 24" Can one be overhauled while the other is at work yes
 No. of Donkey Engines 2 Sizes of Pumps 7 1/2" x 5" x 6" + 8" x 10" No. and size of Suctions connected to both Bilge and Donkey pumps
 In Engine Room P 3 1/2" O 5 1/2" S 3 1/2" In Holds, &c. N^o 1 - 2 of 3" N^o 2 - 2 of 3"
 No. of bilge injections 1 sizes 6" Connected to condenser, or to circulating pump CP 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 none
 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
 When were stern tube, propeller, screw shaft, and all connections examined in dry dock new vessel Is the screw shaft tunnel watertight yes
 Is it fitted with a watertight door yes worked from top platform

BOILERS, &c. — (Letter for record R.) Total Heating Surface of Boilers 5142 f (Howdens F.D.)
 No. and Description of Boilers 2 Cyl. Multiblr S. ended Working Pressure 180 lbs Tested by hydraulic pressure to 360 lbs
 Date of test 25/2/96 Can each boiler be worked separately yes Area of fire grate in each boiler 56 3/4 f No. and Description of safety valves to
 each boiler 2 direct Spring Area of each valve 11 sq Pressure to which they are adjusted 185 lbs Are they fitted
 with easing gear yes Smallest distance between boilers or uptakes and bunkers or woodwork 10" Mean diameter of boilers 15 feet
 Length 4' 6" Material of shell plates S. Thickness 29/64 Description of riveting: circum. seams d. r. lap long. seams T. T. Butt
 Diameter of rivet holes in long. seams 1/2" Pitch of rivets 10" Lap of plates or width of butt straps 2 2 1/8"
 Per centages of strength of longitudinal joint rivets 90 Working pressure of shell by rules 200 lbs Size of manhole in shell 16" x 13"
 Size of compensating ring 9 1/4" x 12" No. and Description of Furnaces in each boiler 3 Adamson rings Material S. Outside diameter 44 1/2"
 Length of plain part top 25 3/8" bottom 25 3/8" Thickness of plates top 5/8" bottom 5/8" Description of longitudinal joint welded No. of strengthening rings 3
 Working pressure of furnace by the rules 180 lbs Combustion chamber plates: Material S. Thickness: Sides 1/16" Back 1/16" Top 1/16" Bottom 3/32"
 Pitch of stays to ditto: Sides 9 1/2" x 9" Back 9 1/2" x 9" Top 9 1/2" x 9" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 181 lbs
 Material of stays S. Diameter at smallest part 1.73" Area supported by each stay 85.5 sq Working pressure by rules 203 lbs End plates in steam space:
 Material S. Thickness 1 1/4" Pitch of stays 18 3/4" x 16 1/2" How are stays secured d. nuts Working pressure by rules 228 lbs Material of stays S.
 Diameter at smallest part 2.19" Area supported by each stay 297 sq Working pressure by rules 201 Material of Front plates at bottom S.
 Thickness 3/4" Material of Lower back plate S. Thickness 3/32" Greatest pitch of stays 14 1/2" Working pressure of plate by rules 180 lbs
 Diameter of tubes 2 1/2" Pitch of tubes 3 3/4" x 3 3/4" Material of tube plates S. Thickness: Front 29/32" Back 23/32" Mean pitch of stays 7 1/2"
 Pitch across wide water spaces 13 1/2" Working pressures by rules 185 lbs Girders to Chamber tops: Material S. Depth and
 thickness of girder at centre 9" x 1 3/8" Length as per rule 31 1/4" Distance apart 9" Number and pitch of Stays in each 2 of 9 1/2"
 Working pressure by rules 180 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 —



DONKEY BOILER— Description *Cochran's Patent.*
 Made at *Birkenhead* By whom made *Cochran & Co.* When made *2/96* Where fixed *Stoke hole*
 Working pressure *80 lbs* Tested by hydraulic pressure to *160 lbs* No. of Certificate *1343* Fire grate area *21 1/2* Description of safety valves *Spring*
 No. of safety valves *2* Area of each *5.9* Pressure to which they are adjusted *80 lbs* If fitted with easing gear *Yes* If steam from main boilers can enter the donkey boiler *No.* Diameter of donkey boiler *6' 6"* Length *14' 0"* Material of shell plates *S.* Thickness *1 3/32*
 Description of riveting long seams *Double riveted* Diameter of rivet holes *7/8* Whether punched or drilled *Drilled* Pitch of rivets *2 1/16*
 Lap of plating *4"* Per centage of strength of joint Rivets *688* Thickness of shell crown plates *7/16* Radius of do. *Spher.* No. of Stays to do. *2*
 Dia. of stays *1/2"* Diameter of furnace Top *2' 8"* Bottom *5' 4"* Length of furnace *Circular* Thickness of furnace plates *9/16* Description of joint *S. Riveted* Thickness of furnace crown plates *9/16* Stayed by *Hemispherical* Working pressure of shell by rules *89.7 lbs*
 Working pressure of furnace by rules *86 lbs* Diameter of uptake *15" x 17"* Thickness of uptake plates *1/2"* Thickness of water tubes *—*

SPARE GEAR. State the articles supplied:— *1 set of connecting rod tops and bottom end bolts & nuts. 2 main bearing bolts & nuts. 1 set of coupling bolts. 1 set of feed & bilge pump valves & propellers. nuts bolts & assorted iron.*
 The foregoing is a correct description,
FOR GEORGE CLARK LIMITED,
Geubly Manufacturer.

General Remarks (State quality of workmanship, opinions as to class, &c.)
 Dates of Survey while building: During progress of work in shops— *1895 Nov. 1925 Dec. 10 20/96 Jan. 24 Feb. 14 19 21 24 25 26 27 28 March 2*
 During erection on board vessel— *5 4 5 9 10 11 16 23*
 Total No. of visits *22*

Machinery & boilers constructed under Special Survey. Materials and workmanship good. Engines & boilers examined under steam & found to be in good working condition. In my opinion this vessel is eligible for the notation in the Register Books of L.M.C. 3/96.

Electric Installation by Clarke Chapman & Co.

It is submitted that this vessel is eligible for THE RECORD.
L.M.C. 3.96 T.D.
Plcc Light
A.S. 26.3.96
Pms 26.3.96

The Surveyors are requested not to write on or below the space for Committee's Minute.

Certificate (if required) to be sent to
 The amount of Entry Fee. . . £ 3 : - : : When applied for
 Special £ 38 : 10 : : 25. Mech. 18. 96
 Donkey Boiler Fee £ - : - : : not applicable
 Travelling Expenses (if any) £ . : . : : 29.2.96
 J. J. Findlay
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute **FRI, MAR 27 1896** MACHINERY CERTIFICATE WRITTEN.
 Assigned *L.M.C. 3.96 T.D.*
Plcc light

