

REPORT ON MACHINERY.

Port of Sunderland.

SAT 23 JAN 1897

Received at London Office

No. in Survey held at Sunderland

Date, first Survey 25 April 96 Last Survey 18th Jan 1897

Reg. Book. on the S/S. "Westralia"

(Number of Visits 42)

Tons } Gross 2884.4
Net 1819

Master D. W. Bull. Built at S. land. By whom built J. Rainy

When built 1896

Engines made at S. land. By whom made G. Clark & Co

when made 1896

Boilers made at S. land. By whom made G. Clark & Co

when made 1896.

Registered Horse Power 500.

Owners Huddard Parker & Co Port belonging to Melbourne.

Nom. Horse Power as per Section 28 403

412 ← The Surveyor does not appear to have taken the pressure into consideration

Is Electric Light fitted yes

ENGINES, &c.—Description of Engines Tri compound.

No. of Cylinders 3.

No. of Cranks 3

Diameter of Cylinders 25" 4 1/2" 68" Length of Stroke 45" Revolutions per minute 70 Diameter of Screw shaft 12 1/4"

Diameter of Tunnel shaft 11 7/8" as per rule 12 1/4" Diameter of Crank shaft journals 13" Diameter of Crank pin 14" Size of Crank webs 20" x 9 1/8"

Diameter of screw 16 3/4" Pitch of screw 19.0" No. of blades 4 State whether moveable yes Total surface 75 1/2"

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 3 Sizes of Pumps 9 x 8 1/2 x 10 7 1/2 x 4 1/2 x 10 7 1/2 x 2 1/2 x 4 No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room 3 3/2" 4 1/2" 8 3/2" In Holds, &c. N^o 1 - 2 of 3" N^o 2 - 2 of 3"

N^o 3 - held 2 of 3" N^o 4 - 1 of 3" Howell. Tunnel well. 2 3/2"

No. of bilge injections 1 sizes 7" Connected to condenser, or to circulating pump C.D. 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.

OILERS, &c.— (Letter for record S.) Total Heating Surface of Boilers 7434 1/2 Is forced draft fitted no.

No. and Description of Boilers 2 cyl. multibore "double ended" Working Pressure 180 lbs. Tested by hydraulic pressure to 360 lbs.

Date of test 17/9/96 Can each boiler be worked separately yes. Area of fire grate in each boiler 119.5 1/2 No. and Description of safety valves to

each boiler 2 spring Area of each valve 12.5 1/2 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 18" Mean diameter of boilers 15' 3"

Length 17' 0" Material of shell plates S. Thickness 1 1/8" Description of riveting: circum. seams A. & J. R. Cap. long. seams T. R. Butt.

Diameter of rivet holes in long. seams 1 7/16" Pitch of rivets 9 5/8" Length of plates or width of butt straps 22"

Per centages of strength of longitudinal joint rivets 90.89 Working pressure of shell by rules 187 lbs. Size of manhole in shell 16" x 13"

plate 85.06 Size of compensating ring 9" x 1 1/16" No. and Description of Furnaces in each boiler 1 corrugated Material S. Outside diameter 3-11 5/8"

Length of plain part 3 9" Thickness of plates crown 19 1/32" Description of longitudinal joint Welded No. of strengthening rings —

bottom 3 9" Working pressure of furnace by the rules 199 lbs. Combustion chamber plates: Material S. Thickness: Sides 1/16" Back — Top 1/16" Bottom 7/8"

Pitch of stays to ditto: Sides 9 1/2" x 9 1/2" Back — Top 9 1/2" x 9 1/2" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 190 lbs.

Material of stays S. Diameter at smallest part 1.6 1/2 Area supported by each stay 84 1/2 Working pressure by rules 215 lbs. End plates in steam space:

Material S. Thickness 1 1/4" Pitch of stays 19 1/2" x 16" How are stays secured d nuts. Working pressure by rules 199 lbs. Material of stays S.

Diameter at smallest part 2 9/16 Area supported by each stay 312 1/2 Working pressure by rules 191. Material of Front plates at bottom S.

Thickness 3/4" Material of Lower back plate S. Thickness — Greatest pitch of stays — Working pressure of plate by rules —

Diameter of tubes 3 1/2" Pitch of tubes 4 3/4" x 4 7/8" Material of tube plates S. Thickness: Front 3/32" + 1/4" Back 1 3/16" Mean pitch of stays 9 1/2" x 9 3/4"

Pitch across wide water spaces 14 3/4" Working pressures by rules 183 lbs. Girders to Chamber tops: Material S. Depth and

thickness of girder at centre 12 1/8" x 1.75 Length as per rule 46" Distance apart 9 1/4" Number and pitch of Stays in each 4 of 9 1/4"

Working pressure by rules 182 lbs. 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

SLD1005-0140

Lloyd's Register Foundation

DONKEY BOILER— Description *Cylindrical, Multitubular, 2 corrugated furnaces.*
 Made at *Sunderland* By whom made *G. Clark & Co.* When made *1896* Where fixed *Stokehole*
 Working pressure *180 lbs* tested by hydraulic pressure to *360* No. of Certificate *1535A* Fire grate area *30 sq ft* Description of safety valves *Spring*
 No. of safety valves *2* Area of each *9.6 sq ft* Pressure to which they are adjusted *185 lbs* If fitted with easing gear *yes*. If steam from main boilers enter the donkey boiler *no*. Diameter of donkey boiler *10.3"* Length *10 ft.* Material of shell plates *S.* Thickness *1"*
 Description of riveting long seams *7.7 butt.* Diameter of rivet holes *1 1/16"* Whether punched or drilled *d.* Pitch of rivets *6 1/2"*
 Straps *16 3/8"* Per centage of strength of joint Rivets *96.3* Thickness of shell *end* plates *1 1/16"* Radius of do. *✓* No. of Stays to do. *10*
 Dia. of stays *2.4"* Diameter of furnace Top *36 7/8"* Bottom *✓* Length of furnace *6 ft.* Thickness of furnace plates *15/32* Description joint *welded* Thickness of furnace crown plates *15/32* Stayed by *✓* Working pressure of shell by rules *192*
 Working pressure of furnace by rules *188 lbs* Diameter of uptake *✓* Thickness of uptake plates *✓* Thickness of water tubes *8 B.W.*

SPARE GEAR. State the articles supplied:— *1 set of connecting rod top and bottom end bolts and nuts, 2 main bearing bolts & nuts, 1 set of coupling bolts, 1 set of feed and bilge pump valves, propeller shaft 1/3 crank shaft, 2 spare blades.*

The foregoing is a correct description,
FOR GEORGE CLARK LIMITED
George Clark & Co. Manufacturer. Main engines & main & donkey boilers

Dates of Survey while building	During progress of work in shops - -	<i>1896. Apr. 25 May 4 24 June 1 July 24 11 15 16 20 22 28 August 5 10 14 19 24 Sep 26 10 14 24 26 Oct. 1 6 13 14 15 19 20 21 26 30 Nov. 4 19 Dec. 2 10 21 1897 Jan 2 11 13</i>
	During erection on board vessel - -	<i>26 10 14 24 26 Oct. 1 6 13 14 15 19 20 21 26 30 Nov. 4 19 Dec. 2 10 21 1897 Jan 2 11 13</i>
	Total No. of visits	<i>42</i>

General Remarks (State quality of workmanship, opinions as to class, &c. *Machinery and boilers constructed under special survey; materials and workmanship good and efficient; steam pipes tested by hydraulic to 360 lbs. Engines & boilers examined under steam & found satisfactory.*

In my opinion this vessel's machinery is now in good order of working condition eligible for the record in the Register Book of L.M.C. 1897.

Electric Light installation by Siemens Bros & Co. Ltd.

It is submitted that this vessel is eligible for THE RECORD + L.M.C. 1897. Elec. Light

J. J. Findlay
 23. 1. 97

The amount of Entry Fee. . . £ 3 : - : - : When applied for.
 Special £ 40 : 3 : - : 21. Jan 1897
 Donkey Boiler Fee £ - : - : - : When received, 21. Jan 1897
 Travelling Expenses (if any) £ - : - : - : 22. Jan 1897

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

Committee's Minute
 Assigned
 TUES 26 JAN 1897
 + L.M.C. 1897
 Electric Light



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