

# REPORT ON MACHINERY.

No. 14294

Port of Sunderland

MON. 5 MAR 1894

Received at London Office

13

No. in Survey held at Sunderland  
Book.

Date, first Survey 30th October 193 Last Survey 23rd Feby 1894  
(Number of Visits 30)

on the S.S. Kirkdale

Gross 2843.24  
Tons Net 1853.49

ster S. Sutherland Built at Sunderland By whom built Messrs. Bartram Haswell & Co. When built 1894

ines made at Sunderland By whom made Mr. John Dickinson when made 1894

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Registered Horse Power 310 Owners John Buthbertson & Co. Port belonging to Glasgow

Horse Power as per Section 28 252

**GINES, &c.**— Description of Engines Triple compound No. of Cylinders 3  
Diameter of Cylinders 23 1/2" 38" x 62" Length of Stroke 42" Revolutions per minute 40 Diameter of Screw shaft 11"  
Diameter of Tunnel shaft 10 1/2" Diameter of Crank shaft journals 12 1/4" Diameter of Crank pin 12 1/2" Size of Crank webs patent  
Diameter of screw 16-0" Pitch of screw 16-3" No. of blades 4 State whether moveable not Total surface 40 sq ft  
No. of Feed pumps 2 Diameter of ditto 3 1/4" Stroke 21" Can one be overhauled while the other is at work yes  
No. of Bilge pumps 2 Diameter of ditto 4 1/4" Stroke 21" Can one be overhauled while the other is at work yes  
No. of Donkey Engines 2 Sizes of Pumps 6x4x6 & 8x9x10" No. and size of Suctions connected to both Bilge and Donkey pumps  
Engine Room centre 3 1/2" wings 3" In Holds, &c. Fore H. two 3" M.H. two 3" After hold two 3"  
After hold well 3 1/2" After tunnel well 3 1/2" Japks centre 4" wings 3"  
No. of bilge injections 1 sizes 4" Connected to condenser, or to circulating pump C.P. 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 yes  
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 9th Feby 1894 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) Total Heating Surface of Boilers 3850 sq ft  
No. and Description of Boilers 2 ordinary marine type Working Pressure 160 lbs Tested by hydraulic pressure to 320 lbs  
Date of test 19-1-94 Can each boiler be worked separately yes Area of fire grate in each boiler 50 sq ft No. and Description of safety valves to  
each boiler 2 direct spring Area of each valve 8.29 sq in Pressure to which they are adjusted 160 lbs Are they fitted  
with easing gear yes Smallest distance between boilers or uptakes and bunkers or woodwork 15" Mean diameter of boilers 14'-6"  
Length 10'-6" Material of shell plates Steel Thickness 1 1/4" Description of riveting: circum. seams double rivet lap long. seams treble rivet d.b.s.  
Diameter of rivet holes in long. seams 1 5/16" Pitch of rivets 8 1/2" Lap of plates or width of butt straps 19 1/4"  
Per centages of strength of longitudinal joint 84.5% Working pressure of shell by rules 145 lbs Size of manhole in shell 16" x 12"  
Size of compensating ring 8 5/8" x 1 1/4" No. and Description of Furnaces in each boiler 3 Purves' pt Material Steel Outside diameter 3'-5"  
Length of plain part top 169" Thickness of plates bottom 12" Description of longitudinal joint welded No. of strengthening rings 1  
Working pressure of furnace by the rules 169 Combustion chamber plates: Material Steel Thickness: Sides 5/8" Back 5/8" Top 5/8" Bottom 1/8"  
Pitch of stays to ditto: Sides 9x8 3/4" Back 9x9" Top 8x9" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 166 lbs  
Material of stays Steel Diameter at smallest part 1 1/2" Area supported by each stay 81 sq in Working pressure by rules 140 lbs End plates in steam space:  
Material Steel Thickness 1 1/8" Pitch of stays 14 1/4" x 15" How are stays secured nuts Working pressure by rules 201 lbs Material of stays Steel  
Diameter at smallest part 2 9/16" Area supported by each stay 260 Working pressure by rules 176 lbs Material of Front plates at bottom Steel  
Thickness 3/4" Material of Lower back plate Steel Thickness 1 1/16" Greatest pitch of stays 13 1/2" Working pressure of plate by rules 160 lbs  
Diameter of tubes 3 1/4" Pitch of tubes 4 1/2" Material of tube plates Steel Thickness: Front 3/4" Back 1/8" Mean pitch of stays 9x9"  
Pitch across wide water spaces 13 1/2" Working pressures by rules 160 lbs Girders to Chamber tops: Material Steel Depth and  
thickness of girder at centre 8 1/2" x 3 1/4" x 2 Length as per rule 2-8 1/2" Distance apart 8" Number and pitch of Stays in each 3 stays 9x8"  
Working pressure by rules 191 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 ( )

0200-066975



**DONKEY BOILER—**

Description *Ordinary marine type 2 plain furnaces.*  
 Made at *Stockton* By whom made *Riley Bros*  
 Working pressure *80 lbs* Tested by hydraulic pressure to *160 lbs* No. of Certificate *437* Fire grate area *25 sq ft* Where fixed *on deck*  
 No. of safety valves *no* Area of each *no* Pressure to which they are adjusted *80 lbs* If fitted with easing gear *yes* If steam from main boilers  
 enter the donkey boiler *no* Diameter of donkey boiler *8'-6"* Length *8'-0"* Material of shell plates *steel* Thickness *1 1/4"*  
 Description of riveting long. seams *lap treble riv* Diameter of rivet holes *1 3/8"* Whether punched or drilled *punched* Pitch of rivets *3"*  
 Lap of plating *6"* Per centage of strength of joint *46%* Thickness of shell plates *5/8"* Radius of do. *pick* of Stays to do. *13"*  
 Dia. of stays *1 5/8"* Diameter of furnaces *30"* Length of furnace *5'-6"* Thickness of furnace plates *1 3/4"* Description  
 joint *lapsingle riv* Thickness of *chr* plates *1 5/8"* Stayed by *1 8 stays riv* pitched *8"x8"* Working pressure of shell by rules *88 lbs*  
 Working pressure of furnace by rules *81 lbs* Diameter of *tube 3"* Thickness of *plates 5/8"* Thickness of water tubes *no*

**SPARE GEAR.** State the articles supplied:— *Top & bottom end connecting rod bolts & nuts, two main bearing bolts & nuts, one set of coupling bolts, feed & bilge pump valves, tail end shaft, propeller, bolts, nuts & iron assorted.*

**FOR JOHNS HOPKINSON** The foregoing is a correct description,

Manufacturer of main engines & boilers

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

*The engines of this Vessel have been constructed under survey, the material and workmanship are good and efficient and the engines when tried under steam work satisfactorily. The main steam pipes have been tested hydraulic pressure to 320 lbs. the pumps, watertight door & sluices are in efficient working order. In my opinion this Vessel is eligible for the notification in the Register Book of +L.M.C. 2-94.*

It is submitted that  
this vessel is eligible for  
THE RECORD + L.M.C. 2-94

M.A.  
5-3-94

Certificate (if required) to be sent to

The amount of Entry Fee.. £ *2* : *12* : *3* When applied for,  
 Special .. .. £ *32* : *12* : *3* March 1894  
 Donkey Boiler Fee .. .. £ .. .. When received,  
 Travelling Expenses (if any) £ .. .. 14. 2. 1894

Committee's Minute

TUES. 6 MAR 1894

Assigned

+ L.M.C. 2, 94

*Park Salmon*

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



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Foundation