

# REPORT ON MACHINERY.

No. 14294

Port of Sunderland

MON. 5 MAR 1894  
Received at London Office

No. in Survey held at Sunderland  
Book.

Date, first Survey 30<sup>th</sup> October 1893 Last Survey 23<sup>rd</sup> Feby 1894  
(Number of Visits 30)

on the S.S. Kirkdale

Tons } Gross 2843.24  
Net 1853.49

Builder Sunderland Built at Sunderland By whom built Messrs. Bartram Haswell & Co. When built 1894.

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

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

Registered Horse Power 310 Owners Jas. R. Southerton Esq. 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 as per rule 11"  
as fitted 12 1/4"

Diameter of Tunnel shaft as per rule 10 1/2" Diameter of Crank shaft journals 12 1/4" Diameter of Crank pin 12 1/2" Size of Crank webs patent  
as fitted 11 3/4"

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  
In Holds, &c. For H<sup>o</sup> two 3" M.H. two 3" After hold two 3"

Engine Room centre 3 1/2" wings 3" After hold well 3 1/2" After tunnel well 3 1/2" Janks 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 9<sup>th</sup> Feb 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 ft 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 dbl riv lap long seams treble riv d.b.s.  
1 5/16" Pitch of rivets 8 1/2" Lap of plates or width of butt straps 19 1/4"

Diameter of rivet holes in long. seams 1 5/16" rivets 9/16" Working pressure of shell by rules 145 lbs Size of manhole in shell 16" x 12"

Percentage of strength of longitudinal joint 84.5% No. and Description of Furnaces in each boiler 3 Purves' pt Material Steel Outside diameter 3'-5"

Size of compensating ring 8 5/8" x 1 1/4" No. and Description of longitudinal joint welded No. of strengthening rings ( )

Length of plain part top 1 1/2" bottom 1 1/2" Thickness of plates 1 1/2" Description of longitudinal joint welded No. of strengthening rings ( )

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" Working pressure by rules 166 lbs

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 140 lbs End plates in steam space:

Material of stays Steel Diameter at smallest part 1 1/2" Area supported by each stay 810 Working pressure by rules 20 lbs Material of stays Steel

Material Steel Thickness 1 1/8" Pitch of stays 14 1/4" x 15" How are stays secured nuts Working pressure by rules 176 lbs Material of Front plates at bottom Steel

Diameter at smallest part 2 9/16" Area supported by each stay 260 Working pressure by rules 160 lbs Working pressure of plate by rules 160 lbs

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* When made *1893* Where fixed *on deck*

Working pressure *80 lbs* tested by hydraulic pressure to *160 lbs* No. of Certificate *437* Fire grate area *25 sq ft* Description of safety valves *direct spring*

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 *no*

enter the donkey boiler *no* Diameter of donkey boiler *8'-6"* Length *8'-0"* Material of shell plates *steel* Thickness *1/4"*

Description of riveting long. seams *lap treble riv* Diameter of rivet holes *13/16"* Whether punched or drilled *punched* Pitch of rivets *3/32"*

Lap of plating *6"* Per centage of strength of joint *46%* Rivets *46%* Thickness of shell plates *5/8"* Radius of do. *pitch* of Stays to do. *13"*

Dia. of stays *1 5/8"* Diameter of furnaces *Top 30"* Bottom *no* Length of furnace *5'-6"* Thickness of furnace plates *13/32" + 1/16"* Description of joint *lapsingle riv* Thickness of furnace plates *15/32" + top 1/2"* 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 tubes *3"* Thickness of tube plates *5/16" + 1/16"* 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 JOHN KINGDON** The foregoing is a correct description,

*[Signature]* 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 supervision, 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 doors & 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*

*Park Salmon*

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

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

Committee's Minute **TUES. 6 MAR 1894**

Assigned *+ L.M.C. 2, 94*



© 2021 Lloyd's Register Foundation