

Rpt. 4.

## REPORT ON MACHINERY.

No. 52590

Mub No 4993

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Port of Newcastle

Date, first Survey 4<sup>th</sup> Apr '06Last Survey Mub 8<sup>th</sup> April 1904

No. in Survey held at Newcastle

Reg. Book.

45 Supp on the

S/S "Fitzclarence"

(Number of Visits 49)

Master J Stott

Built at Middlesbrough

By whom built R Craggs &amp; Sons Ltd

Gross 4406.61

Net 2832.20

When built 1904

Engines made at Halliwell

By whom made H E &amp; Co 60 Ltd

when made 1906-7

Boilers made at "

By whom made "

when made 1906-7

Registered Horse Power

Owners Fitzclarence S S Co Ltd

Port belonging to Glasgow

Nom. Horse Power as per Section 28 366

Is Refrigerating Machinery fitted for cargo purposes No

Is Electric Light fitted No

## ENGINES, &amp;c.—Description of Engines

No. of Cylinders 3

No. of Cranks 3

Dia. of Cylinders 25" 41" 68" Length of Stroke 48" Revs. per minute 67

Is the screw shaft fitted with a continuous liner the whole length of the stern tube 403. ✓

in the propeller boss Yes. If the liner is in more than one length are the joints burned ✓

between the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive ✓

liners are fitted, is the shaft lapped or protected between the liners ✓

Dia. of Tunnel shaft as per rule 11.1" Dia. of Crank shaft journals as per rule 11.2" Dia. of Crank pin 11.75" Size of Crank webs 8.25" Dia. of thrust shaft under

collars 11.5" Dia. of screw 17.6" Pitch of Screw 14.9" No. of Blades 4 State whether moveable 25 Total surface 95.5"

No. of Feed pumps 2 Diameter of ditto 4" Stroke 26" Can one be overhauled while the other is at work 400..

No. of Bilge pumps 2 Diameter of ditto 4.2" Stroke 26" Can one be overhauled while the other is at work 400..

No. of Donkey Engines 3 Sizes of Pumps 10x12x12 18"x5.5x8.5 22x32x6 No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room 4 of 3" + 1 of 5" In Holds, &amp;c. Two of 3" in each hold and in

No. of Bilge Injections 1 sizes 6 Connected to condenser, or to circulating pump ✓ Is a separate Donkey Suction fitted in Engine room &amp; size 40 3.5"

Are all the bilge suction pipes fitted with roses 400. Are the roses in Engine room always accessible 400. Are the sluices on Engine room bulkheads always accessible ✓

Are all connections with the sea direct on the skin of the ship 400. Are they Valves or Cocks 400.

Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates 400. 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 400. Are the Blow Off Cocks fitted with a spigot and brass covering plate 400.

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 400.

Are the Bilge Suction Pipes, Cocks, and Valves arranged so as to prevent any communication between the sea and the bilges 400.

Dates of examination of completion of fitting of Sea Connections 9.2.07 of Stern Tube 9.2.07 Screw shaft and Propeller 26.2.07

Is the Screw Shaft Tunnel watertight 400. Is it fitted with a watertight door 400. worked from Upper plating ✓

## BOILERS, &amp;c.—(Letter for record S.)

Manufacturers of Steel J. Spence &amp; Sons Ltd

Total Heating Surface of Boilers 5900 f Is Forced Draft fitted No. No. and Description of Boilers 3 S.E. ✓

Working Pressure 180 lbs Tested by hydraulic pressure to 360. Date of test 14.11.06 No. of Certificate 4340

Can each boiler be worked separately 400. Area of fire grate in each boiler 56.3 f No. and Description of Safety Valves to

each boiler 2 Spring. Area of each valve 4.07 f Pressure to which they are adjusted 185 lbs Are they fitted with easing gear 400.

Smallest distance between boilers or uptakes and bunkers or woodwork 24. Mean dia. of boilers 14.18" Length 11.25" Material of shell plates 82

Thickness 18. Range of tensile strength 28.4 38. Are the shell plates welded or flanged 400. Descrip. of riveting: cir. seams 2x lap

long. seams 7x lap Diameter of rivet holes in long. seams 18. Pitch of rivets 4 3/4" Lap of plates or width of butt straps 16 5/8"

Per centages of strength of longitudinal joint rivets 84.7. Working pressure of shell by rules 182 lbs Size of manhole in shell 16x12" 8x10"

Size of compensating ring flanged. No. and Description of Furnaces in each boiler 3 24" Material S Outside diameter 3.82"

Length of plain part top bottom Thickness of plates crown bottom 3 1/2" Description of longitudinal joint welded. No. of strengthening rings

Working pressure of furnace by the rules 184. Combustion chamber plates: Material S Thickness: Sides 16 Back 16 Top 16 Bottom 3 1/2"

Pitch of stays to ditto: Sides 9 1/2 x 9 3/4 Back 10 x 8 1/2 Top 9 1/2 x 9 3/4 If stays are fitted with nuts or riveted heads nuts Working pressure by rules 183 lbs

Material of stays S Diameter at smallest part 1.78" Area supported by each stay 10 x 8 1/2 Working pressure by rules 181 lbs End plates in steam space:

Material 1 1/2" Thickness 1 1/2" Pitch of stays 23 x 20" How are stays secured 7 nuts Working pressure by rules 184 lbs Material of stays S

Diameter at smallest part 8 1/2" Area supported by each stay 23 x 20" Working pressure by rules 184 lbs Material of Front plates at bottom S

Thickness 3/32" Material of Lower back plate S Thickness 3/32" Greatest pitch of stays 14 1/2" Working pressure of plate by rules 190 lbs

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

Pitch across wide water spaces 14 1/2" Working pressures by rules 182 Girders to Chamber tops: Material S Depth and

thickness of girder at centre 8 1/2 x 1 1/2 Length as per rule 30 Distance apart 92 Number and pitch of stays in each 20 x 9 3/4"

Working pressure by rules 182 Superheater or Steam chest; how connected to boiler 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

fitted with rings Distance between rings Working pressure by rules End plates: Thickness How stayed

pressure of end plates Area of safety valves to superheater Are they fitted with easing gear



*Manufacturers of Steel*

SPARE GEAR. State the articles supplied:— 1 Set connecting rod bolts. nuts. 1 Set main bearing bolts nuts. 1 Set coupling bolts nuts. 1 Set feed and bilge pump valves. nuts bolts and assorted iron. propeller. & Shaft.

*Manufacturer.*

Is the approved plan of main boiler forwarded herewith *yes*

General Remarks (State quality of workmanship, opinions as to class, &c. Machinery and boilers built under Special Survey from approved plans. Materials and workmanship good and efficient. Engines and boilers examined under full steam & found satisfactory. In our opinion this vessel is eligible for the record of \* L.M.C. 4/04. in the Register.

It is submitted that  
this vessel is eligible for  
**THE RECORD, + L. M. C. 4,07**

*Assigned*

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

Lloyd's Register  
Foundation

only **HULL** CERTIFICATE  
WRITTEN.