

# REPORT ON MACHINERY.

Nwc. No. 46,573  
No. 21685 *Std*

1UES. 1 MAR 1904

Port of *Sunderland*

Received at London Office 10

No. in Survey held at *Sunderland*

Date, first Survey *17<sup>th</sup> Sept 03* Last Survey *8<sup>th</sup> Feb 1904*

Reg. Book.

(Number of Visits)

on the *Steel S.S. "Canada Cape"*

Tons } Gross *4286*  
Net *2795*

Master *Dymon* Built at *Newcastle* By whom built *Northumbrian S.S. Co. Ltd* When built *1904*

Engines made at *Sunderland* By whom made *Richardsons, Wigham & Co. Ltd.* when made *1904*

Boilers made at *Sunderland* By whom made *Richardsons, Wigham & Co. Ltd.* when made *1904*

Registered Horse Power Owners *Elde Dempster & Co. Ltd* Port belonging to *Liverpool*

Nom. Horse Power as per Section 28 *372* Is Refrigerating Machinery fitted *Yes* Is Electric Light fitted *No*

ENGINES, &c.—Description of Engines *Twin compound surface condensing* No. of Cylinders *3* No. of Cranks *3*

Dia. of Cylinders *25" - 41" - 69"* Length of Stroke *48"* Revs. per minute *65* Dia. of Screw shaft *14.9"* Material of screw shaft *W.S.*

Is the screw shaft fitted with a continuous liner the whole length of the stern tube *No.* Is the after end of the liner made water tight

in the propeller boss *No.* If the liner is in more than one length are the joints burned *No.* If the liner does not fit tightly at the part

between the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive *No.* If two

liners are fitted, is the shaft lapped or protected between the liners *No.* Length of stern bush *5'-1 1/2"*

Dia. of Tunnel shaft *12.69"* Dia. of Crank shaft journals *13.22"* Dia. of Crank pin *14"* Size of Crank webs *20 1/2" x 8 1/2"* Dia. of thrust shaft under

collars *14 1/4"* Dia. of screw *17'-0"* Pitch of screw *17'-0"* No. of blades *4* State whether moceable *No.* Total surface *85 1/2*

No. of Feed pumps *2* Diameter of ditto *3 3/4"* Stroke *27"* Can one be overhauled while the other is at work *Yes.*

No. of Bilge pumps *2* Diameter of ditto *4"* Stroke *27"* Can one be overhauled while the other is at work *Yes.*

No. of Donkey Engines *3* Sizes of Pumps *11" x 10", 7 1/2" x 4 1/2" x 6", 6 1/2" x 4" x 6"* No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room *4 of 3 1/2"* In Holds, &c. *2 of 3 1/2" in each hold.*

No. of bilge injections *1* sizes *5"* 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 *—*

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 *20-12-03.* 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 *5940 1/2* Is forced draft fitted *No.*

No. and Description of Boilers *Three single ended multitubular* Working Pressure *180 lbs.* Tested by hydraulic pressure to *360 lbs.*

Date of test *23/12/03.* Can each boiler be worked separately *Yes.* Area of fire grate in each boiler *50 1/2* No. and Description of safety valves to

each boiler *2 Spring* Area of each valve *7.07* 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 *1'-6"* Mean dia. of boilers *14'-0"* Length *10'-9"* Material of shell plates *Steel.*

Thickness *1 1/4"* Range of tensile strength *28 1/2 - 32* Are they welded or flanged *No.* Descrip. of riveting: cir. seams *A.R.L.* long. seams *T.R.D.B.*

Diameter of rivet holes in long. seams *1 3/8"* Pitch of rivets *8 3/8"* Lap of plates or width of butt straps *15 1/2"*

Per centages of strength of longitudinal joint rivets *87.28* Working pressure of shell by rules *202.7 lbs.* Size of manhole in shell *16" x 12"*

Size of compensating ring *Flanged.* No. and Description of Furnaces in each boiler *3 Minimum* Material *Steel* Outside diameter *3'-7 1/2"*

Length of plain part top *—* bottom *—* Thickness of plates crown *17/32"* Description of longitudinal joint *Welded* No. of strengthening rings *—*

Working pressure of furnace by the rules *189 lbs.* Combustion chamber plates: Material *Steel* Thickness: Sides *5/8"* Back *5/8"* Top *5/8"* Bottom *9/16"*

Pitch of stays to ditto: Sides *8" x 8"* Back *8" x 8"* Top *8" x 7 1/2"* If stays are fitted with nuts or riveted heads *Yes + washers* Working pressure by rules *211 lbs.*

Material of stays *Steel* Diameter at smallest part *1.5"* Area supported by each stay *64"* Working pressure by rules *187 lbs.* End plates in steam space:

Material *Steel* Thickness *15/16"* Pitch of stays *15" x 14"* How are stays secured *By nuts.* Working pressure by rules *187 lbs.* Material of stays *Steel*

Area at smallest part *5.05"* Area supported by each stay *210"* Working pressure by rules *240 lbs.* Material of Front plates at bottom *Steel*

Thickness *3/4"* Material of Lower back plate *Steel* Thickness *3/4"* Greatest pitch of stays *15"* Working pressure of plate by rules *269 lbs.*

Diameter of tubes *3 1/4"* Pitch of tubes *4 1/2" x 4 1/2"* Material of tube plates *Steel* Thickness: Front *3/4"*: Back *27/32"* Mean pitch of stays *9" x 8 1/2"*

Pitch across wide water spaces *14 1/2"* Working pressures by rules *192 lbs.* Girders to Chamber tops: Material *Steel* Depth and

thickness of girder at centre *8 1/2" x 1 1/2"* Length as per rule *28 5/8"* Distance apart *7 1/2"* Number and pitch of Stays in each *2, 8"*

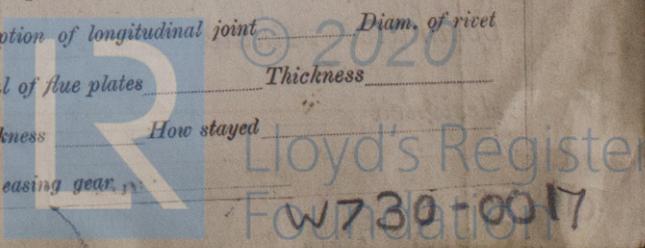
Working pressure by rules *242 lbs.* Superheater or Steam chest; how connected to boiler *None.* Can the superheater be shut off and the boiler worked

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 *—*



**Auxiliary DONKEY BOILER**— No. 1 Description Single ended multitubular.  
 Made at Dundland By whom made Richardsons, Westgarth & Co. Ltd. When made 1904 Where fixed At the hold.  
 Working pressure 180 lbs tested by hydraulic pressure to 360 lbs No. of Certificate 2227 Fire grate area 50 sq ft Description of safety valves Direct spring  
 No. of safety valves 2 Area of each 7.07 Pressure to which they are adjusted 185 lbs If fitted with easing gear Yes If steam from main boilers can enter the donkey boiler No Dia. of donkey boiler 14'-0" Length 10'-9" Material of shell plates Steel Thickness 1 1/4" Range of tensile strength 285-32 Descrip. of riveting long. seams T. R. D. B. Dia. of rivet holes 1 3/8" Whether punched or drilled Drilled Pitch of rivets 8 3/4"  
 Width of shell plates 15 1/2" Per centage of strength of joint Rivets 87.38 Plates 85.35 Thickness of shell crown plates ✓ Radius of do. ✓ No. of Stays to do. ✓  
 Dia. of stays ✓ Diameter of furnace Top 3'-7 1/2" Bottom ✓ Length of furnace ✓ Thickness of furnace plates 1 7/32" Description of joint Welded Thickness of furnace crown plates 1 7/32" Stayed by ✓ Working pressure of shell by rules 202 lbs  
 Working pressure of furnace by rules 189 lbs Diameter of uptake ✓ Thickness of uptake plates ✓ Thickness of water tubes 7/8" S.W.

**SPARE GEAR.** State the articles supplied:— Propeller + propeller shaft, top + bottom end connecting rod bolts + nuts, 2 main bearing bolts + nuts, set of coupling bolts, feed + bilge pump valves, bolts nuts + iron worked.

The foregoing is a correct description,

**RICHARDSONS, WESTGARTH & CO., LTD**  
 Manufacturer J. R. Russell CHIEF DRAUGHTSMAN

Dates of Survey while building  
 During progress of work in shops— 1903- Sep 17 Oct 16 23 Nov 12 19 23 Dec 4 10 15 16 21 22 23  
 During erection on board vessel— 1904- Jan 8 9 12 15 21 22 23 Feb 1 8  
 Total No. of visits 23

Is the approved plan of main boiler forwarded herewith Yes  
 " " " donkey " " " return duplicate

**General Remarks** (State quality of workmanship, opinions as to class, &c.) The machinery of this vessel has been built under Special Survey, the material and workmanship are good, the boilers and steam pipes were tested by hydraulic pressure to double the working pressure. The whole of the machinery worked well and the safety valves were adjusted under steam as stated above.  
The substitution of ~~the machinery~~ This vessel, in our opinion is eligible to have the notation of + L.M.C. 2,04 in the Register Book.

It is submitted that this vessel is eligible for THE RECORD L.M.C. 2.04. REF: MCHY.

W.S.  
1-3-04

Certificate (if required) to be sent to

The amount of Entry Fee.. £ 26 8  
 Special .. £ 38 12  
 Donkey Boiler Fee .. £ :  
 Travelling Expenses (if any) £ :  
 When applied for, 23 2 1904  
 When received, 23 3 04

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

Committee's Minute FRI. 4 MAR 1904

Assigned + L.M.C. 2,04



STRA  
 FLAT PLATE (If Bar Keel, GARBOARD OR  
 State actual thickness in way of Double Bottom.  
 M.O.K. SHEET  
 S.O.K. SHEET  
 DOUBLING of Length and thickness of POOP SIDES BRIDGE SIDES FORECASTLE  
 Manufa manufacture Plates, Plati  
 FRAMES REVERSE  
 LOWER MA  
 Bowsprit  
 Topmasts, Rigging, Sails.  
 EQUIPM  
 Number of Certificate  
 4240  
 4272  
 4284  
 5732  
 5731  
 Number of Certificate  
 2626  
 2626  
 Stream Steel Wire  
 Boats  
 Pumps, I  
 Windlass  
 Engine  
 What arr  
 Coal Bu  
 Number c  
 Ceiling i  
 Cargo H:  
 State size  
 Number c  
 Bulwark  
 The above  
 Builder's