

REPORT ON MACHINERY.

No. 25918

FRI. NOV. 21. 1913

Date of writing Report 19 When handed in at Local Office 20. 11. 1913 Port of Sunderland.
 No. in Survey held at Sunderland Date. First Survey 7 May Last Survey 13 Novr 1913
 Reg. Book. on the Shel 3/3 Den of Curia (Number of Visits 38)
 Master A. White Built at Sunderland By whom built J.L. Thompson & Sons Ltd. Tons } Gross 4645
 Engines made at Sunderland By whom made J. Dickinson & Sons Ltd. when made 1913 Net 2853
 Boilers made at " By whom made " when made 1913
 Registered Horse Power Owners Barrie Shipping Co. Ltd. Port belonging to Sunderland
 Nom. Horse Power as per Section 28 455 Is Refrigerating Machinery fitted for cargo purposes no. Is Electric Light fitted yes

ENGINES, &c.—Description of Engines J. C.P.A. No. of Cylinders 3 No. of Cranks 3
 Dia. of Cylinders 24 1/2. 44 1/2 x 14. Length of Stroke 48 Revs. per minute 40 Dia. of Screw shaft as per rule 14.89 Material of screw shaft 3
 as fitted 15 Is the screw shaft fitted with a continuous liner the whole length of the stern tube yes. Is the after-end of the liner made water tight in the propeller boss yes. If the liner is in more than one length are the joints burned ✓. 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 ✓. If two liners are fitted, is the shaft lapped or protected between the liners ✓. Length of stern bush 5 feet
 Dia. of Tunnel shaft as per rule 13.48 Dia. of Crank shaft journals as per rule 14.15 Dia. of Crank pin 14 1/2 Size of Crank webs patent Dia. of thrust shaft under collars 14 1/2 Dia. of screw 17 9/16 Pitch of Screw 17 6/16 No. of Blades 4 State whether moveable no Total surface 1082 sq
 No. of Feed pumps 2 Diameter of ditto 4 1/2 Stroke 24 Can one be overhauled while the other is at work yes
 No. of Bilge pumps 2 Diameter of ditto 5 Stroke 24 Can one be overhauled while the other is at work yes
 No. of Donkey Engines 3 Sizes of Pumps 10x10 (4x24) (4 1/2 x 10) No. and size of Suctions connected to both Bilge and Donkey pumps
 In Engine Room four 3 1/2 In Holds, &c. two of 3 1/2 in each
 Tunnel 2 1/2
 No. of Bilge Injections 1 sizes 4 Connected to condenser, or to circulating pump CP 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
 Dates of examination of completion of fitting of Sea Connections 24.9.13 of Stern Tube 20.10.13 Screw shaft and Propeller 20.10.13
 Is the Screw Shaft Tunnel watertight yes Is it fitted with a watertight door yes worked from top platform

BOILERS, &c.—(Letter for record B) Manufacturers of Steel J. Spencer & Sons Ltd.
 Total Heating Surface of Boilers 7575 sq Is Forced Draft fitted no No. and Description of Boilers 3 Marine type
 Working Pressure 180 lbs Tested by hydraulic pressure to 360 Date of test 15 Oct. 1913 No. of Certificate 3157
 Can each boiler be worked separately yes Area of fire grate in each boiler 65 sq No. and Description of Safety Valves to each boiler two Spring Area of each valve 8.3 Pressure to which they are adjusted 185 Are they fitted with easing gear yes
 Smallest distance between boilers or uptakes and bunkers or woodwork 1' 5" Mean dia. of boilers 15' 9" Length 11' 6" Material of shell plates 8
 Thickness 3/32 Range of tensile strength 28 1/2 - 32 Are the shell plates welded or flanged no Descrip. of riveting: cir. seams d. 7/16
 long. seams R.A. butt Diameter of rivet holes in long. seams 15/16 Pitch of rivets 8 5/16 Lap of plates or width of butt straps 1' 1/4
 Per centages of strength of longitudinal joint rivets 92.46 Working pressure of shell by rules 181 lbs Size of manhole in shell 16 x 12
 plate 85.31
 Size of compensating ring 8 7/8 x 1 3/32 No. and Description of Furnaces in each boiler 3 Corrugated Material 8 Outside diameter 4.2
 Length of plain part top 19 Thickness of plates bottom 3/32 Description of longitudinal joint weld No. of strengthening rings ✓
 Working pressure of furnace by the rules 189 Combustion chamber plates: Material 8 Thickness: Sides 1/16 Back 1/16 Top 1/16 Bottom 1/8
 Pitch of stays to ditto: Sides 10 3/4 x 8 Back 10 3/8 x 8 1/2 Top 10 x 9 If stays are fitted with nuts or riveted heads nuts Working pressure by rules 187
 Material of stays 8 Diameter at smallest part 1.6 Area supported by each stay 94 1/2 Working pressure by rules 184 End plates in steam space: Material 8 Thickness 1 3/16 Pitch of stays 18 1/2 x 20 How are stays secured d nuts Working pressure by rules 181 Material of stays 8
 Diameter at smallest part 2.92 Area supported by each stay 370 Working pressure by rules 188 Material of Front plates at bottom 8
 Thickness 3/8 Material of Lower back plate 8 Thickness 29/32 Greatest pitch of stays 14 x 10 1/2 Working pressure of plate by rules 184
 Diameter of tubes 3 1/4 Pitch of tubes 42 x 42 Material of tube plates 8 Thickness: Front 1/8 Back 1/8 Mean pitch of stays 9 x 11 1/4
 Pitch across wide water spaces 1' 1 1/4 Working pressures by rules 288 lbs Girders to Chamber tops: Material 8 Depth and thickness of girder at centre 7 1/2 x 2 Length as per rule 2.8 1/2 Distance apart 9 Number and pitch of stays in each 2 @ 10
 Working pressure by rules 184 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
 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

If not, state whether, and when, one will be sent

Lloyd's Register Foundation
 W55h-0116

VERTICAL DONKEY BOILER— Manufacturers of Steel

No. _____ Description _____

Made at _____ By whom made _____ When made _____ Where fixed _____

Working pressure tested by hydraulic pressure to _____ Date of test _____ No. of Certificate _____ Fire grate area _____ Description of Safety _____

Valves _____ No. of Safety Valves _____ Area of each _____ Pressure to which they are adjusted _____ Date of adjustment _____

If fitted with easing gear _____ If steam from main boilers can enter the donkey boiler _____ Dia. of donkey boiler _____ Length _____

Material of shell plates _____ Thickness _____ Range of tensile strength _____ Descrip. of riveting long. seams _____

Dia. of rivet holes _____ Whether punched or drilled _____ Pitch of rivets _____ Lap of plating _____ Per centage of strength of joint _____ Rivets _____ Plates _____

Working pressure of shell by rules _____ Thickness of shell crown plates _____ Radius of do. _____ No. of stays to do. _____ Dia. of stays _____

Diameter of furnace Top _____ Bottom _____ Length of furnace _____ Thickness of furnace plates _____ Description of joint _____

Working pressure of furnace by rules _____ Thickness of furnace crown plates _____ Radius of do. _____ Stayed by _____

Diameter of uptake _____ Thickness of uptake plates _____ Thickness of water tubes _____ Dates of survey _____

SPARE GEAR. State the articles supplied: *Propeller & propeller shaft. Set of Coupling bolts & nuts two top & bottom end bolts & nuts. Set of holding down bolts & nuts. 1 Set feed & bilge pump valves & seats. 2 main and 2 donkey check valves. Set of Air & Live pump ballast & donkey valves. Two valves & seats for duplex feed pump. Assorted bolts & nuts & iron of various sizes*

The foregoing is a correct description,
John Dickinson & Sons, Limited.
Archibald Manufacturer.

Dates of Survey while building

During progress of work in shops - - -	1913 May 7, Jun 2, Jul 1, 3, 8, 10, Aug 5, 6, 4, 21, 27, 29, Sep 8, 19, 20, 22, 24
During erection on board vessel - - -	Oct 1, 6, 7, 9, 13, 15, 16, 20, 21, 22, 23, 24, 27, 28, 29, 30, 31, Nov 1, 5, 11, 12
Total No. of visits	(38)

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

" " " donkey " " " *no*

Dates of Examination of principal parts—Cylinders *19.9.13* Slides *6.8.13* Covers *6.8.13* Pistons *8.9.13* Rods *19.9.13*

Connecting rods *19.9.13* Crank shaft *1.10.13* Thrust shaft *1.10.13* Tunnel shafts *1.10.13* Screw shaft *24.9.13* Propeller *24.9.13*

Stern tube *24.9.13* Steam pipes tested *22.10.13* Engine and boiler seatings *20.9.13* Engines holding down bolts *27.10.13*

Completion of pumping arrangements *31.10.13* Boilers fixed *27.10.13* Engines tried under steam *31.10.13*

Main boiler safety valves adjusted *31.10.13* Thickness of adjusting washers *TB f 5/32" a 3/8", CB p 1/32" s 1/32" SB f 1/32" a 7/16"*

Material of Crank shaft *S* Identification Mark on Do. *9416 2532 5333 7573* Material of Thrust shaft *S* Identification Mark on Do. *PA. 5814*

Material of Tunnel shafts *S* Identification Marks on Do. *2901 243 MB* Material of Screw shafts *S* Identification Marks on Do. *236 4275 42 44*

Material of Steam Pipes *C* Test pressure *370 lbs*

General Remarks (State quality of workmanship, opinions as to class, &c. *Machinery and boilers constructed under survey. Materials and workmanship good. Engines & boilers examined under full steam & found satisfactory. In my opinion this vessel is worthy of the record in the Register of L.M.C. 11/1913*

It is submitted that
 this vessel is eligible for
THE RECORD. + LMC 11.13.

J.W.D.
24/11/13
J.P.S.

The amount of Entry Fee £ *3* : : When applied for, _____

Special £ *42:15* : : *18.11.13*

Donkey Boiler Fee £ : : : When received, _____

Travelling Expenses (if any) £ : : : *20.11.13*

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

Committee's Minute TUE. NOV. 25. 1913
 Assigned + LMC 11.13



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