

REPORT ON MACHINERY.

No. 24334
THUR. 3 FEB 1910

Date of writing Report 19 When handed in at Local Office 2.2.10 Port of Sunderland Received at London Office
 No. in Survey held at Sunderland Reg. Book. Date, First Survey 25th July '09 Last Survey 26 January 1910
 on the S.S. "Collingham" (Number of Visits)
 Master Built at Sunderland By whom built J.L. Thompson & Sons Ltd Tons Gross 4080 Net 2540
 Engines made at Sunderland By whom made J. Dickinson & Sons Ltd When built 1909-10
 Boilers made at " By whom made " when made 1909-10
 Registered Horse Power Owners Harris Dixon Ltd when made "
 Nom. Horse Power as per Section 28 350 Is Refrigerating Machinery fitted for cargo purposes Port belonging to London.

ENGINES, &c.—Description of Engines

Diagrams *See C.P. 10*
 Dia. of Cylinders 25.42" 68" Length of Stroke 48. Revs. per minute 70 No. of Cylinders 3 No. of Cranks 3
 Is the screw shaft fitted with a continuous liner the whole length of the stern tube *yes* Dia. of Screw shaft as per rule 14.34 Material of screw shaft *Iron*
 in the propeller boss *yes* If the liner is in more than one length are the joints burned - Is the after end of the liner made water tight
 between the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive - If the liner does not fit tightly at the part
 liners are fitted, is the shaft lapped or protected between the liners *yes* If two
 Dia. of Tunnel shaft as per rule 13.73 Length of stern bush 5 feet
 as fitted 12.75 Dia. of Crank shaft journals as per rule 13.34
 collars 13 3/8 Dia. of screw 17'6" Pitch of Screw 16 ft. Dia. of Crank pin 13 3/8 Size of Crank webs *Patent* Dia. of thrust shaft under
 No. of Feed pumps 2 Diameter of ditto 4 Stroke 24 Can one be overhauled while the other is at work *yes* Total surface 862 sq ft
 No. of Bilge pumps 2 Diameter of ditto 4 1/2 Stroke 24 Can one be overhauled while the other is at work *yes*
 No. of Donkey Engines 2 Sizes of Pumps 8" 10" 10" 4 1/2" 5" 4" No. and size of Suctions connected to both Bilge and Donkey pumps
 In Engine Room 2 of 3 1/2" 2 of 3 1/2" In Holds, &c. 2 of 3 1/2" in each
 No. of Bilge Injections 1 sizes 4 Connected to condenser, or to circulating pump *yes* 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 9.12.09 of Stern Tube 9.12.09. Screw shaft and Propeller 9.12.09
 Is the Screw Shaft Tunnel watertight *yes* Is it fitted with a watertight door *yes* worked from *top platform*

BOILERS, &c.—(Letter for record)

Manufacturers of Steel *J. Spencor & Sons Ltd*
 Total Heating Surface of Boilers 5415 sq ft Is Forced Draft fitted *no* No. and Description of Boilers 2 S.C.
 Working Pressure 180 Tested by hydraulic pressure to 360 Date of test 11.12.09 No. of Certificate 2999
 Can each boiler be worked separately *yes* Area of fire grate in each boiler 68 sq ft No. and Description of Safety Valves to
 each boiler 2 Spring Area of each valve 8.3 sq in Pressure to which they are adjusted 185 lb. Are they fitted with easing gear *yes*
 Smallest distance between boilers or uptakes and bunkers or woodwork 2 feet Mean dia. of boilers 16'6" Length 11'6" Material of shell plates *Iron*
 Thickness 1/2" Range of tensile strength 282-32 lb Are the shell plates welded or flanged *fl.* Descrip. of riveting: cir. seams *st. lap*
 long. seams *d. butts* Diameter of rivet holes in long. seams 1 3/8 Pitch of rivets 9 5/16 Lap of plates or width of butt straps 20 1/8
 Per centages of strength of longitudinal joint rivets 92.6 Working pressure of shell by rules 181 lbs Size of manhole in shell 16" x 12"
 plate 85.2 No. and Description of Furnaces in each boiler 3 Patent *Deighton* Material *Iron* Outside diameter 4'4"
 Length of plain part top Thickness of plates crown 1 1/2" Description of longitudinal joint *weld.* No. of strengthening rings
 bottom Working pressure of furnace by the rules 181. Combustion chamber plates: Material *Iron* Thickness: Sides 1/2" Back 1/2" Top 1/2" Bottom 1/2"
 Pitch of stays to ditto: Sides 10 x 9 Back 9 1/2 x 9 1/2 Top 10 x 9 If stays are fitted with nuts or riveted heads *nuts* Working pressure by rules 181
 Material of stays *Iron* Diameter at smallest part 2.03" Area supported by each stay 90" Working pressure by rules 204. End plates in steam space:
 Material *Iron* Thickness 1 1/2" Pitch of stays 22 1/2 x 19 1/2 How are stays secured *d. nut* Working pressure by rules 181 Material of stays *Iron*
 Diameter at smallest part 1 1/2" Area supported by each stay 44 1/2 Working pressure by rules 183 Material of Front plates at bottom *Iron*
 Thickness 1/2" Material of Lower back plate *Iron* Thickness 1/2" Greatest pitch of stays 13 1/2 Working pressure of plate by rules 182.
 Diameter of tubes 3 1/2 Pitch of tubes 4 1/2 x 4 1/2 Material of tube plates *Iron* Thickness: Front 1/2" Back 1/2" Mean pitch of stays 9
 Pitch across wide water spaces 13 1/2 Working pressures by rules 287. Girders to Chamber tops: Material *Iron* Depth and
 thickness of girder at centre 8 1/2 x 2 1/2 Length as per rule 34 1/2 Distance apart 10 Number and pitch of stays in each *3 @ 9"*
 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



VERTICAL DONKEY BOILER— Manufacturers of Steel

| | | | | |
|--------------------------------------|--|---------------------------|-------------------------------------|----------------------------------|
| No. | Description | | When made | Where fixed |
| Made at | By whom made | | | |
| Working pressure | tested by hydraulic pressure to | Date of test | No. of Certificate | Fire grate area |
| 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 |
| 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 | | Stayed by | |
| Diameter of uptake | Thickness of uptake plates | Thickness of water tubes | Dates of survey | |

SPARE GEAR. State the articles supplied:— 1 set connecting rod bolts & nuts, two main bearing bolts & nuts, 1 set coupling bolts & nuts, 1 set feed bridge pump valves, propeller, nuts & bolts, and iron, assorted.

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

| | | | | |
|--------------------------------|-----------------------------------|----------------------------------|---------------------|--|
| Dates of Survey while building | During progress of work in shops— | During erection on board vessel— | Total No. of visits | Is the approved plan of main boiler forwarded herewith |
| | 1909 July 22, 24, 26, 29 | 27 Oct 18, 14, 15, 18, 26 | 48 | Ylo. |
| | | 1910 Jan 5, 10, 13, 15, 20, 26 | | Ylo. |

| | | | | | |
|--|---------------|---------------------------|----------|----------------------------|----------|
| Dates of Examination of principal parts— | Cylinders | Slides | Covers | Pistons | Rods |
| | 27.9.09 | 18.11.09 | 23.9.09 | 6.12.09 | 6.12.09 |
| Connecting rods | 6.12.09 | Crank shaft | 1.12.09 | Thrust shaft | 1.12.09 |
| Stern tube | 29.11.09 | Steam pipes tested | 24.12.09 | Engine and boiler seatings | 9.12.09 |
| Completion of pumping arrangements | 10.1.10 | Boilers fixed | 29.12.09 | Engines holding down bolts | 29.12.09 |
| Main boiler safety valves adjusted | 10.1.10 | Engines tried under steam | 10.1.10 | | |
| Material of Crank shaft | Stal. 45.9.09 | Material of Thrust shaft | D. | | |
| Material of Tunnel shafts | SM 8.09 | Material of Screw shafts | J. | | |
| Material of Steam Pipes | Copper | Test pressure | 360 lbs. | | |

General Remarks (State quality of workmanship, opinions as to class, &c.)
 Machinery and boilers built under special survey. Materials and workmanship good. Engines tried under steam & found satisfactory. It is submitted that this vessel is eligible for the record of L.M.C. 110.

It is submitted that this vessel is eligible for THE RECORD. + L.M.C. 110

H.G.D.
 4-2-10

| | | | |
|------------------------------|---------|-------------------|--------|
| The amount of Entry Fee | £ 3 | When applied for, | 2.2.10 |
| Special | £ 37.10 | When received, | 4.2.10 |
| Donkey Boiler Fee | £ | | |
| Travelling Expenses (if any) | £ | | |

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

Committee's Minute
 Assigned
 + L.M.C. 110



Sunderland

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