

REPORT ON MACHINERY.

No. 25104

Received at London Office

THU. DEC. 28 1911

Date of writing Report 20.12.10 When handed in at Local Office 19 Port of SUNDERLAND.

No. in Survey held at SUNDERLAND. Date, First Survey 11 Octbr. Last Survey 18 Decr 1911
 Reg. Book. on the Steel & Co. 'Cheltonian' (Number of Visits 21) Tons { Gross 4426
 Net 2762
 Master Jones Built at Sunderland By whom built Bartram & Sons When built 1911
 Engines made at Sunderland By whom made John Dickinson & Sons Ltd. when made 1911
 Boilers made at do. By whom made do. when made 1911
 Registered Horse Power 401 Owners Cambrian S.S. Co. Ltd. Port belonging to London
 Nom. Horse Power as per Section 28 401 Is Refrigerating Machinery fitted for cargo purposes Yes Is Electric Light fitted Yes

ENGINES, &c.—Description of Engines Tri-compound No. of Cylinders 3 No. of Cranks 3
 Dia. of Cylinders 26. 43. 71 Length of Stroke 48 Revs. per minute 70 Dia. of Screw shaft as per rule 14.5 Material of W.I.
 as fitted 14.5 screw shaft
 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 5-0
 Dia. of Tunnel shaft as per rule 13.03 Dia. of Crank shaft journals as per rule 13.68 Dia. of Crank pin 13 3/4 Size of Crank webs 8 1/2 x 25 Dia. of thrust shaft under
 collars 13 3/4 Dia. of screw 17-6 Pitch of Screw 16-6 No. of Blades 4 State whether moveable No Total surface 8 1/2 sq ft
 No. of Feed pumps 2 Diameter of ditto 4 Stroke 25 1/2 Can one be overhauled while the other is at work Yes
 No. of Bilge pumps 2 Diameter of ditto 4 1/2 Stroke 25 1/2 Can one be overhauled while the other is at work Yes
 No. of Donkey Engines 3 Sizes of Pumps Ballast 9x10 2 Duplex 5x6 No. and size of Suctions connected to both Bilge and Donkey pumps
 In Engine Room 3 of 2 1/2 In Holds, &c. two 3 1/2 in each hold
 No. of Bilge Injections 1 size 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 27.11.11 of Stern Tube 27.11.11 Screw shaft and Propeller 27.11.11
 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) Manufacturers of Steel J. Spencer & Sons Ltd.

Total Heating Surface of Boilers 6483 sq ft Is Forced Draft fitted No No. and Description of Boilers 3 single-ended
 Working Pressure 180 lb. Tested by hydraulic pressure to 360 lb. Date of test 1 Decr. 11 No. of Certificate 2971
 Can each boiler be worked separately Yes Area of fire grate in each boiler 60 sq ft No. and Description of Safety Valves to
 each boiler 2 spring Area of each valve 8.3 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 7-0 Mean dia. of boilers 15 ft. Length 11-3 Material of shell plates steel
 Thickness 1 1/2 Range of tensile strength 28 1/2 / 32 Are the shell plates welded or flanged No Descrip. of riveting: cir. seams d.r. lap
 long. seams d. butt Diameter of rivet holes in long. seams 1 5/16 Pitch of rivets 8 15/16 Lap of plates or width of butt straps 1-7 1/4
 Per centages of strength of longitudinal joint 92-46 Working pressure of shell by rules 188 lb. Size of manhole in shell 16 X 12
 plate 85-31 Size of compensating ring 8 7/8 X 1 1/2 No. and Description of Furnaces in each boiler 3 Morrison Material S Outside diameter 3-10
 Length of plain part top 6 Thickness of plates crown 35/64 Description of longitudinal joint Weld No. of strengthening rings ✓
 bottom 6 Working pressure of furnace by the rules 185 Combustion chamber plates: Material S Thickness: Sides 5/8 Back 5/8 Top 5/8 Bottom 7/8
 Pitch of stays to ditto: Sides 8x8 Back 8x8 Top 8x8 If stays are fitted with nuts or riveted heads Auto Working pressure by rules 211 lb
 Material of stays S Diameter at smallest part 1-35 Area supported by each stay 64 Working pressure by rules 181 End plates in steam space:
 Material S Thickness 1 1/2 Pitch of stays 17x20 1/2 How are stays secured d. nut Working pressure by rules 209 Material of stays S
 Diameter at smallest part 2-16 Area supported by each stay 348 Working pressure by rules 235 Material of Front plates at bottom S
 Thickness 1 5/16 Material of Lower back plate S Thickness 7/8 Greatest pitch of stays 13 1/2 x 8 Working pressure of plate by rules 215
 Diameter of tubes 3 1/4 Pitch of tubes 4 1/2 x 4 1/2 Material of tube plates S Thickness: Front 1 5/16 Back 7/8 Mean pitch of stays 9x9
 Pitch across wide water spaces 1-1 1/4 Working pressures by rules 180 Girders to Chamber tops: Material S Depth and
 thickness of girder at centre 7 3/8 x 2 Length as per rule 2-7 3/8 Distance apart 8 Number and pitch of stays in each 3 @ 8
 Working pressure by rules 198 lb 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	No. of Certificate	Fire grate area
Working pressure	tested by hydraulic pressure to	Date of test	Description of Safety
Valves	No. of Safety Valves	Area of each	Pressure to which they are adjusted
If fitted with easing gear	If steam from main boilers can enter the donkey boiler	Dia. of donkey boiler	Date of adjustment
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
Working pressure of shell by rules	Thickness of shell crown plates	Radius of do.	No. of stays to do.
Diameter of furnace Top	Bottom	Length of furnace	Thickness of furnace plates
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, 4 main feed deck valves, 1 donkey feed check valve, 2 safety + 2 escape valve springs, 2 sets air, 3 sets circulating and 1 set of feed + bilge pump valves, 2 feed + 2 ballast donkey valves, set of coupling bolts, nuts, washers, 2 connecting rod top & bottom and bolts + nuts + 2 main bearing bolts.

The foregoing is a correct description,

John D. [Signature]

Manufacturer.

Dates of Survey while building	During progress of work in shops --	1911. Octbr. 11. 12. 13. 14. 30. 31. Nov. 7. 13. 15. 20. 22. 27
	During erection on board vessel --	Dec. 1. 2. 4. 5. 7. 8. 12. 16. 18.
	Total No. of visits	(11)
	Is the approved plan of main boiler forwarded herewith	Yls ✓
	" " " donkey " " "	✓
Dates of Examination of principal parts	Cylinders	12. 10. 11.
	Slides	11. 10. 11.
	Covers	13. 10. 11.
	Pistons	13. 10. 11.
	Rods	13. 10. 11.
	Connecting rods	13. 10. 11.
	Crank shaft	30. 10. 11.
	Thrust shaft	13. 11. 11.
	Tunnel shafts	13. 11. 11.
	Screw shaft	30. 10. 11.
	Propeller	30. 10. 11.
	Stern tube	27. 11. 11.
	Steam pipes tested	5. 12. 11.
	Engine and boiler seatings	2. 12. 11.
	Engines holding down bolts	2. 12. 11.
	Completion of pumping arrangements	20. 11. 11.
	Boilers fixed	4. 12. 11.
	Engines tried under steam	7. 12. 11.
	Main boiler safety valves adjusted	7. 12. 11.
	Thickness of adjusting washers	Port A 13/32 F 13/32 Centre (L 3/8 S 3/8) Starboard A 13/32 F 13/32
	Material of Crank shaft	Steel Identification Mark on Do. J.T.F.
	Material of Thrust shaft	Steel Identification Mark on Do. M.B. 745
	Material of Tunnel shafts	Steel Identification Marks on Do. K.H.M.B.
	Material of Screw shafts	W. Iron Identification Marks on Do. 4545 J.T.F.
	Material of Steam Pipes	Copper ✓
	Test pressure	400 lbs. ✓

General Remarks (State quality of workmanship, opinions as to class, &c.)

The machinery and boilers of this vessel have been constructed under Special Survey and the materials and workmanship are good. The engines and boilers have been examined and tried under full steam and found satisfactory. In my opinion, the machinery of this vessel is eligible for the record of + LMC. 12. 11. in the Register Book.

It is submitted that this vessel is eligible for THE RECORD + LMC 12. 11.

The amount of Entry Fee	£ 3 : = :	When applied for,
Special	£ 40 : 1 :	21. 12. 1911
Donkey Boiler Fee	£ :	When received,
Travelling Expenses (if any)	£ :	22. 12. 1911

Committee's Minute

FRI. DEC. 29. 1911

Assigned

+ LMC 12. 11

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

MACHINERY CERTIFICATE WRITTEN



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