

REPORT ON MACHINERY.

No. 75d8.
MON. SEP. 3 - 1912

Received at London Office

Report of writing Report 16.8.12. When handed in at Local Office 16.8.12. Port of Middlesbrough
 Date, First Survey 17. May Last Survey 17. Aug. 1912
 Reg. Book. on the Steel Screw Steamer "NURTURETON" (S.S.N. 471) Gross 6059.00
 Master J. E. Howell Built at Stockton By whom built Messrs. Roper & Sons Ltd. Net 4506.99
 Engines made at Stockton By whom made Messrs. Blair & Co. Ltd. (No. 1739) when made 1912
 Boilers made at Stockton By whom made Messrs. Blair & Co. Ltd. when made 1912
 Registered Horse Power Owners Chapman & Co. Port belonging to Newcastle
 Nom. Horse Power as per Section 28 448 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted no

Engines, &c.—Description of Engines Tri-compound No. of Cylinders 3 No. of Cranks 3
 Dia. of Cylinders 25½ - 43 - 71 Length of Stroke 48 Revs. per minute 60 Dia. of Screw shaft as per rule 14.54 Material of iron
 as fitted 15¼ 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 in one 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 tight fit If two
 liners are fitted, is the shaft lapped or protected between the liners Length of stern bush 5'-4"
 Dia. of Tunnel shaft as per rule 12.94 Dia. of Crank shaft journals as per rule 13.58 Dia. of Crank pin 14¾ Size of Crank webs 28½ x 9½ Dia. of thrust shaft under
 as fitted 14¼ as fitted 14¼ collars 14¾ Dia. of screw 17.9 Pitch of Screw 17'-6" No. of Blades 4 State whether moveable no Total surface 100 sq ft
 No. of Feed pumps 2 Diameter of ditto 3½ Stroke 34 Can one be overhauled while the other is at work yes
 No. of Bilge pumps 2 Diameter of ditto 5 Stroke 34 Can one be overhauled while the other is at work yes
 No. of Donkey Engines 3 Sizes of Pumps 2 Ballast 10" x 10" + 10" x 13 No. and size of Suctions connected to both Bilge and Donkey pumps
 In Engine Room will 3 @ 3½ In Holds, &c. Nos 3, 4 & 5 holds 2 each @ 3½
 Nos 1 & 2 holds one each @ 3½: Tunnel will 1 @ 2½

No. of Bilge Injections 1 sizes 7" 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 yes
 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 forward hold suction How are they protected wood casing
 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 5.7.12 of Stern Tube 5.7.12 Screw shaft and Propeller 17.7.12

Is the Screw Shaft Tunnel watertight in hull yes Is it fitted with a watertight door yes worked from Top platform

BOILERS, &c.—(Letter for record (5)) Manufacturers of Steel Messrs. John Sponner & Sons
 2 main & 1 aux
 Total Heating Surface of Boilers 7841 Is Forced Draft fitted no No. and Description of Boilers 3 Single ended (2 main + 1 aux)
 Working Pressure 180 Tested by hydraulic pressure to 360 Date of test 21.6.12 No. of Certificate 4896
 Can each boiler be worked separately yes Area of fire grate in each boiler 68.5 sq ft No. and Description of Safety Valves to
 each boiler 2 direct spring Area of each valve 8.29 sq ft 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'-9" Mean dia. of boilers 16'-9" Length 11'-6" Material of shell plates steel
 Thickness 1½ Range of tensile strength 28-32 Are the shell plates welded or flanged no Descrip. of riveting: cir. seams 2 R. lap
 long. seams 2 B-3 Riv Diameter of rivet holes in long. seams 1½ Pitch of rivets 9¼ Lap of plates on width of butt straps 20½ x 1¼
 5 Rivets per pitch rivets 89.5 Working pressure of shell by rules 183 Size of manhole in shell 16" x 12"
 Per centages of strength of longitudinal joint plate 85.15
 Size of compensating ring 7½ x 1½ No. and Description of Furnaces in each boiler 3 Morrison Material steel Outside diameter 49½
 Length of plain part top 12 Thickness of plates crown 12 bottom 12 Description of longitudinal joint welded No. of strengthening rings
 Working pressure of furnace by the rules 190 Combustion chamber plates: Material steel Thickness: Sides ½ Back ½ Top ½ Bottom ½
 Pitch of stays to ditto: Sides 8½ x 10½ Back 9½ x 9½ Top 9½ x 9½ If stays are fitted with nuts or riveted heads nuts Working pressure by rules 183
 Material of stays steel Diameter at smallest part 1.59 Area supported by each stay 84.2 Working pressure by rules 213 End plates in steam space:
 Material steel Thickness 1½ Pitch of stays 22½ x 19½ How are stays secured nuts & washers Working pressure by rules 182 Material of stays steel
 Diameter at smallest part 3.16 Area supported by each stay 442 Working pressure by rules 184 Material of Front plates at bottom steel
 Thickness 1" Material of Lower back plate steel Thickness 1½ Greatest pitch of stays 15½ x 9½ Working pressure of plate by rules 271
 Diameter of tubes 3½ Pitch of tubes 4½ x 4½ Material of tube plates steel Thickness: Front 1½ Back 1½ Mean pitch of stays 9½
 Pitch across wide water spaces 14½ Working pressures by rules 181 Girders to Chamber tops: Material steel Depth and
 thickness of girder at centre 8" x 2" Length as per rule 32 Distance apart 9½ Number and pitch of stays in each 2 @ 9½
 Working pressure by rules 192 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

W685 - 0006

VERTICAL DONKEY BOILER—

Manufacturers of Steel

Home

No. Description
 Made at By whom made
 Working pressure tested by hydraulic pressure to Date of test When made Where fixed
 Valves No. of Safety Valves Area of each Pressure to which they are adjusted No. of Certificate Fire grate area Description of Safety
 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
 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:— Two each of con. rod top end, bottom end, and main bearing bolts and nuts: one set of coupling bolts and nuts, one set feed and bilge pump valves; assorted bolts & nuts: iron of various sizes: $\frac{1}{3}$ " crank shaft; one tail end shaft and one propeller.

The foregoing is a correct description,

FOR BEAR & CO., LIMITED.

Bro Kettle ship

Manufacturer.

Dates of Survey while building
 During progress of work in shops --
 During erection on board vessel --
 Total No. of visits

SECRETARY,

19th May 1912. 16. 10. 22. 24. 29. 30. 31. June 3. 4. 6. 7. 10. 11. 12. 13. 14. 15. 20. 21. 22. 24. 25. 27. 29. 30. July 1. 3. 5. 17. 19. 22. 23. 26. 30. Aug. 7. 14. 15. 27. 28. 31. 37

Is the approved plan of main boiler forwarded herewith

yes

Dates of Examination of principal parts—Cylinders 31.5.12 Slides 29.5.12 Covers 24.5.12 Pistons 6.6.12 Rods 6.6.12
 Connecting rods 29.5.12 Crank shaft 11.6.12 Thrust shaft 30.5.12 Tunnel shafts 29.5.12 Screw shaft 3.7.12 Propeller 1.7.12
 Stern tube 26.6.12 Steam pipes tested 23.7.12 Engine and boiler seatings 5.7.12 Engines holding down bolts 22.7.12
 Completion of pumping arrangements 7.8.12 Boilers fixed 7.8.12 Engines tried under steam 7.8.12
 Main boiler safety valves adjusted 7.8.12 Thickness of adjusting washers PBl $P-\frac{1}{32}$ SBl $P-\frac{1}{32}$: Aux FV $\frac{1}{32}$ AV $\frac{3}{8}$
 Material of Crank shaft *Iron* Identification Mark on Do. 6745 Material of Thrust shaft *Iron* Identification Mark on Do. 8693-N
 Material of Tunnel shafts *Iron* Identification Marks on Do. 8693-N + one = 8999-N Material of Screw shafts *iron* Identification Marks on Do. 6745
 Material of Steam Pipes *Solid drawn copper* ($7\frac{1}{2} \times \frac{5}{8}$; $5\frac{1}{2} \times \frac{1}{4}$) Test pressure 400 lbs.

General Remarks (State quality of workmanship, opinions as to class, &c. The machinery of this vessel has been built under special survey. The materials and workmanship are sound and good. The boilers and main steam pipes were tested by hydraulic pressure and the engines and boilers examined under steam and all found satisfactory. The machinery of this vessel is now in a good and safe working condition and eligible in my opinion to have the notation of *LMC-8.12 in the Register Book.

It is submitted that this vessel is eligible for THE RECORD + LMC 8.12.

The amount of Entry Fee .. £ 3 - 0 - 0 When applied for, 19.8
 Special .. £ 42 - 8 - 0
 Donkey Boiler Fee .. £
 Travelling Expenses (if any) £

When received, 21.8

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

Committee's Minute

Assigned

TUE SEP 3 - 1912

+ LMC 8.12

MACHINERY CERTIFICATE WRITTEN.



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