

# REPORT ON MACHINERY.

No. 45170

Received at London Office

25 NOV 1925

Date of writing Report 19-11-1925 When handed in at Local Office 23-11-1925 Port of GLASGOW  
 No. in Survey held at Paisley Date, First Survey 11.6.25 Last Survey 12th Nov. 1925  
 Reg. Book. on the Steel Twin Screw Steamer "KERALA" (Number of Visits 28) Tons { Gross 78 Net 11  
 Master By whom built By whom made By whom made By whom made  
 Engines made at Paisley By whom made By whom made By whom made By whom made  
 Boilers made at do. By whom made do. do. do.  
 Registered Horse Power 38 Owners India Stores Department (Hyd. India Office) Port belonging to Glasgow  
 Nom. Horse Power as per Section 28 38 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted No

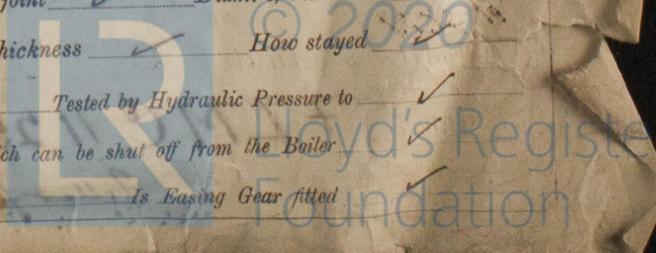
**ENGINES, &c.**—Description of Engines Twin Compound, Surface condensing No. of Cylinders 4 No. of Cranks 4  
 Dia. of Cylinders 8 1/2" x 17" (Twin) Length of Stroke 14" Revs. per minute 220 Dia. of Screw shaft 3 1/8" Material of screw shaft steel  
 Is the screw shaft fitted with a continuous liner the whole length of the stern tube yes: wool glass 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 yes 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 yes If two  
 liners are fitted, is the shaft lapped or protected between the liners yes Length of stern bush 4 1/4"  
 Dia. of Tunnel shaft 3 1/4" Dia. of Crank shaft journals 3 1/4" Dia. of Crank pin 3 3/4" Size of Crank webs 7 x 2 1/2" Dia. of thrust shaft under  
 collars 3 3/4" Dia. of screw 4 1/2" Pitch of Screw 5 1/2" No. of Blades 3 State whether moveable No Total surface 8.5 ft.²  
 No. of Feed pumps 2 Diameter of ditto 1 1/4" Stroke 5 1/4" Can one be overhauled while the other is at work yes  
 No. of Bilge pumps 2 Diameter of ditto 1 1/4" Stroke 5 1/4" Can one be overhauled while the other is at work yes  
 No. of Donkey Engines 1 Sizes of Pumps 3" x 7" No. and size of Suctions connected to both Bilge and Donkey pumps  
 In Engine Room 1 @ 2" In Holds, &c. 2 @ 2" Inc. peak 1 @ 2"  
 No. of Bilge Injections 1 sizes 3/4" Connected to condenser, or to circulating pump yes Is a separate Donkey Suction fitted in Engine room & size yes: 2"  
 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 oil Forward bilge suction How are they protected Pipes are of solid drawn steel  
 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  
 Is the Screw Shaft Tunnel watertight none Is it fitted with a watertight door worked from

**BOILERS, &c.**—(Letter for record S) Manufacturers of Steel W. Beardmore & Co. Ltd.  
 Total Heating Surface of Boilers 877 ft.² Is Forced Draft fitted no No. and Description of Boilers 1 - Cylindrical, 18" Return Tube  
 Working Pressure 130 lbs./in.² Tested by hydraulic pressure to 245 lbs./in.² Date of test 8th Oct. 1925 No. of Certificate 16945  
 Can each boiler be worked separately yes Area of fire grate in each boiler Oil burning only No. and Description of Safety Valves to  
 each boiler 2: Direct spring Area of each valve 4.9 ins.² Pressure to which they are adjusted 130 lbs./in.² Are they fitted with easing gear yes  
 Smallest distance between boilers or uptakes and bunkers or woodwork 2 ft. Mean dia. of boilers 10' 3" Length 8' 9" Material of shell plates steel  
 Thickness 1 1/16" Range of tensile strength 28-32 tons/in.² Are the shell plates welded or flanged no Descrip. of riveting: cir. seams D.R. Lap  
 long. seams D.R.D.B.S. Diameter of rivet holes in long. seams 7/8" Pitch of rivets 4 25/32" Lap of plates or width of butt straps 9 3/8"  
 Per centages of strength of longitudinal joint 84.3 Working pressure of shell by rules 135 lbs./in.² Size of manhole in shell 16" x 12"  
 Size of compensating ring 7" x 1 1/16" No. and Description of Furnaces in each boiler 2 Corrupted (Sights) Material steel Outside diameter 2' 10 1/2"  
 Length of plain part top Thickness of plates crown 1 1/32" Description of longitudinal joint weld No. of strengthening rings yes  
 Working pressure of furnace by the rules 138 lbs./in.² Combustion chamber plates: Material steel Thickness: Sides 9/16" Back 9/16" Top 9/16" Bottom 9/16"  
 Pitch of stays to ditto: Sides 9" x 9" Back 9" x 9" Top 9" x 9" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 134 lbs./in.²  
 Material of stays steel Area at smallest part 81 ins.² Area supported by each stay 99 ins.² Working pressure by rules 154 lbs./in.² End plates in steam space:  
 Material steel Thickness 1 3/16" Pitch of stays P.C.S. = 19.5 How are stays secured 2 nuts Working pressure by rules 133 lbs./in.² Material of stays steel  
 Area at smallest part 2 1/4" Area supported by each stay 208 ins.² Working pressure by rules 166 lbs./in.² Material of Front plates at bottom steel  
 Thickness 1 3/16" Material of Lower back plate steel Thickness 1 3/16" Greatest pitch of stays P.C.S. = 17" Working pressure of plate by rules 168 lbs./in.²  
 Diameter of tubes 3" Pitch of tubes 4" x 4" Material of tube plates steel Thickness: Front 1 1/16" Back 5/8" Mean pitch of stays 10"  
 Pitch across wide water spaces 13" x 8" Working pressures by rules 137 lbs./in.² Girders to Chamber tops: Material steel Depth and  
 thickness of girder at centre 8" x 1 1/4" Length as per rule 2' 2 5/16" Distance apart 9" Number and pitch of stays in each 2 @ 9"  
 Working pressure by rules 230 lbs./in.² Steam dome: description of joint to shell None fitted % of strength of joint yes  
 Diameter yes Thickness of shell plates yes Material yes Description of longitudinal joint yes Diam. of rivet holes yes  
 Pitch of rivets yes Working pressure of shell by rules yes Crown plates yes Thickness yes How stayed yes

**SUPERHEATER.** Type None Date of Approval of Plan yes Tested by Hydraulic Pressure to yes  
 Date of Test yes Is a Safety Valve fitted to each Section of the Superheater which can be shut off from the Boiler yes  
 Diameter of Safety Valve yes Pressure to which each is adjusted yes Is Easing Gear fitted yes

If used, state whether, and which, side will be used

5410-5521M



IS A DONKEY BOILER FITTED? *No*

If so, is a report now forwarded?

SPARE GEAR. State the articles supplied:-

- 2* - connecting rod top-end bolts + nuts.
- 2* - connecting rod bottom-end bolts + nuts.
- 2* - main bearing bolts.
- 1* set - coupling bolts.
- 1* set - feed & bilge pump valves.
- A* quantity assorted bolts + nuts.
- Iron* of various sizes, Brasses for main bearings, top & bottom ends etc.

The foregoing is a correct description,

Manufacturer.

*BOW, MACGILLAN & CO., LTD*

*John Baxter*  
Director.

Dates of Survey while building

During progress of work in shops	<i>1925 June 11-29 July 3-6-15-22-24-28-31 Aug 19-31 Sept 3-8-17-22-25-30</i>
During erection on board vessel	<i>Oct 8-13-16-21-22-29-30 Nov 2-10-11-12</i>
Total No. of visits	<i>28</i>

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

Dates of Examination of principal parts—Cylinders *28-7-25* Slides *28-7-25* Covers *28-7-25* Pistons *8-9-25* Rods *25-9-25*  
 Connecting rods *3-9-25* Crank shafts *25-9-25* Thrust shafts *25-9-25* Tunnel shafts *25-9-25* Screw shafts *30-9-25* Propellers *17-9-25*  
 Stern tubes *8-10-25* Steam pipes tested *22-10-25* Engine and boiler seatings *30-9-25* Engines holding down bolts *21-10-25*  
 Completion of pumping arrangements *11-11-25* Boilers fixed *29-10-25* Engines tried under steam *12-11-25*  
 Completion of fitting sea connections *13-10-25* Stern tubes *8-10-25 + 13-10-25* Screw shafts and propellers *13-10-25*  
 Main boiler safety valves adjusted *10-11-25* Thickness of adjusting washers *1/2" P. 5/16" S.*  
 Material of Crank shafts *steel* Identification Mark on Do. *LLOYD'S NO 1167 J.D.B. 25-9-25*  
 Material of Tunnel shafts *steel* Identification Marks on Do. *LLOYD'S NO 1167 J.D.B. 25-9-25*  
 Material of Steam Pipes *Solid drawn copper* Material of Screw shafts *steel* Identification Marks on Do. *LLOYD'S NO 1167 J.D.B. 30-9-25*  
 Is an installation fitted for burning oil fuel *yes* Test pressure *260 lb./sq. in.*  
 Is the flash point of the oil to be used over 150°F. *yes*

Have the requirements of Section 49 of the Rules been complied with *yes*  
 Is this machinery duplicate of a previous case *no* If so, state name of vessel

General Remarks (State quality of workmanship, opinions as to class, &c.) *These engines + the Boiler have been built under special survey in accordance with the approved plans and the Rules for Vessels trading in Estuaries, Rivers, Lakes + Lochs. The material + workmanship are good. The Machinery has been properly secured on board and tried under steam with satisfactory result.*

*This Machinery is eligible, in my opinion, to be classed in the Register Book and to have Provisions of L.M.C. - 11.25. C.L. (P. + S.) and fitted for oil fuel 11.25 F.P. above 150°F.*

*It is submitted that this vessel is eligible for THE RECORD + LMC 11.25. CL. Fitted for oil fuel 11.25. F.P. above 150°F.*

The amount of Entry Fee ... £ *2* : - :  
 Special ... £ *15* : - :  
 Donkey Boiler Fee ... £ - : - :  
 Travelling Expenses (if any) £ - : - :  
 When applied for, *20/11/25*  
 When received, *24 NOV 1925*

*J.D. Boyle*  
Engineer Surveyor to Lloyd's Register of Shipping.  
*26/11/25*

Committee's Minute *GLASGOW 24 NOV 1925*

Assigned *+ LMC 11.25*

*Fitted for oil fuel 11.25 F.P. above 150°F*



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Certificate (if required) to be sent to Glasgow.