

# REPORT ON MACHINERY

No. 34386

Date of writing Report June 26 1923 When handed in at Local Office June 26 1923 Port of HULL Received at London Office WED. JUL 4 1923

No. in Survey held at Hull Date, First Survey 22-1-23 Last Survey June 21<sup>st</sup> 1923  
Reg. Book. on the S.S. "MALRIX" (Number of Visits 31)

Master Built at Selby By whom built Cochrane & Sons Ltd. Tons { Gross 707  
Net 358  
When built 1923

Engines made at Hull By whom made C.B. Holmes & Co. Ltd. when made 1923  
Boilers made at Hull By whom made C.B. Holmes & Co. Ltd. when made 1923

Registered Horse Power Owners (R. Lise & Sons Lupts) Port belonging to Hull  
Nom. Horse Power as per Section 28 96 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted yes

## ENGINES, &c.—Description of Engines Triple Expansion No. of Cylinders 3 No. of Cranks 3

Dia. of Cylinders 13. 23. 37 Length of Stroke 26 Revs. per minute 102 Dia. of Screw shaft as per rule 8.08 Material of screw shaft Steel  
as fitted 8 1/4"

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 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 36"

Dia. of Tunnel shaft as per rule 4.0 Dia. of Crank shaft journals as per rule 4.36 Dia. of Crank pin 4 1/2" Size of Crank webs 11x4 7/8" Dia. of thrust shaft under collars 4 1/2" Dia. of screw 10-1 1/2" Pitch of Screw 10-10 1/2" No. of Blades 4 State whether moceable No Total surface 36 sq. feet.

No. of Feed pumps one Diameter of ditto 2 7/8" Stroke 14 3/4" Can one be overhauled while the other is at work yes  
No. of Bilge pumps one Diameter of ditto 2 7/8" Stroke 14 3/4" Can one be overhauled while the other is at work yes

No. of Donkey Engines two Sizes of Pumps Feed 5x32x6 No. and size of Suctions connected to both Bilge and Donkey pumps  
Ballast 7x7x8 In Engine Room 3 @ 2 1/4" In Holds, &c. F.P.T. 1 @ 2 1/2" No. 1. Hdd 2 @ 2 1/2"

No. of Bilge Injections one sizes 3 1/2" Connected to condenser or circulating pump yes Is a separate Donkey Suction fitted in Engine room & size yes 3 1/2"  
to new Are all the bilge suction pipes fitted with roses rules Are the roses in Engine room always accessible rules 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 Suctions 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

Is the Screw Shaft Tunnel watertight yes Is it fitted with a watertight door yes worked from yes

## BOILERS, &c.—(Letter for record S) Manufacturers of Steel Port Talbot Steel Works.

Total Heating Surface of Boilers 1683 sq. ft. Is Forced Draft fitted no No. and Description of Boilers Single ended marine  
Working Pressure 200 lbs. sq. in. Tested by hydraulic pressure to 350 lbs. sq. in. Date of test 20/4/23 No. of Certificate 3508

Can each boiler be worked separately yes Area of fire grate in each boiler 48 sq. ft. No. and Description of Safety Valves to each boiler 2 Spring loaded Area of each valve 4.9 sq. in. Pressure to which they are adjusted 200 lbs. sq. in. Are they fitted with easing gear yes

Smallest distance between boiler or uptakes and bunkers or woodwork 24" Mean dia. of boilers 13'-9" Length 10'-6" Material of shell plates Steel  
Thickness 1 1/4" Range of tensile strength 38/32 tons. Are the shell plates welded or flanged yes Descrip. of riveting: cir. seams br.

long. seams T.R. 0.85. Diameter of rivet holes in long. seams 1 1/32" Pitch of rivets 8 1/8" Top of plates or width of butt straps 18"  
Per centages of strength of longitudinal joint rivets 87.5 Working pressure of shell by rules 203 Size of manhole in shell 16" x 12"  
plate 85.0.

Size of compensating ring 1 1/4" x 7" No. and Description of Furnaces in each boiler 3 Plain Material Steel Outside diameter 40.5"  
Length of plain part top 39.75 Thickness of plates crown 1 3/16" Description of longitudinal joint welded No. of strengthening rings yes  
bottom 1 1/16"

Working pressure of furnace by the rules 210 Combustion chamber plates: Material Steel Thickness: Sides 23/32 Back 23/32 Top 3/4 Bottom 23/32  
Pitch of stays to ditto: Sides 10x8 Back 10x8 Top 11x8 If stays are fitted with nuts or riveted heads nuts Working pressure by rules 210

Material of stays Steel Area at smallest part 2.04 sq. in. Area supported by each stay 80 sq. in. Working pressure by rules 216 End plates in steam space: Material Steel Thickness 1 1/32" Pitch of stays 8 1/2 x 18 How are stays secured br. & w. Working pressure by rules 208 Material of stays Steel

Area at smallest part 7.5 sq. in. Area supported by each stay 333 Working pressure by rules 214 Material of Front plates at bottom Steel  
Thickness 1 5/16" Material of Lower back plate Steel Thickness 1 5/16" Greatest pitch of stays 13 3/4 x 9 1/2 Working pressure of plate by rules 214

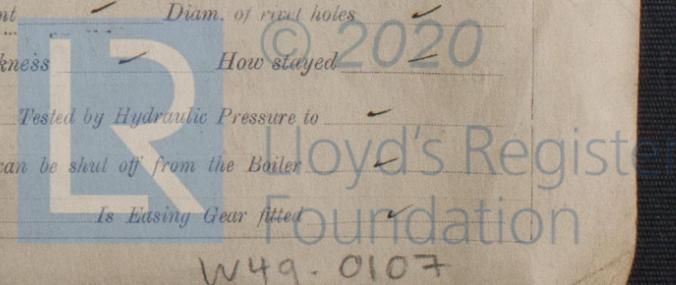
Diameter of tubes 3 1/2" Pitch of tubes 4 1/4" Material of tube plates Steel Thickness: Front 1 5/16" Back 7/8" Mean pitch of stays 10 1/5  
Pitch across wide water spaces 14" Working pressures by rules 270 Girders to Chamber tops: Material Steel Depth and thickness of girder at centre 11 x 7/8" (2) Length as per rule 2'-10 3/4" Distance apart 11" Number and pitch of stays in each 3 @ 8"

Working pressure by rules 210 Steam dome: description of joint to shell yes % 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 yes 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



W49.0107

IS A DONKEY BOILER FITTED? no

If so, is a report now forwarded?

SPARE GEAR. State the articles supplied: Two top end bolts & nuts. Two bottom end bolts & nuts. Two main bearing bolts & nuts. Set of coupling bolts & nuts. Air, feed & bilge pump valves. 6 pump ring studs & nuts. Main & donkey check valves. Safety valve spring. 3 condenser tubes. Assorted bolts & nuts, & iron various sizes.

The foregoing is a correct description,

FOR CHARLES D. HOLMES & Co. LTD.

*J. Godfree*

Manufacturer.

Dates of Survey while building: During progress of work in shops - 1923. Jan 22, 31. Feb. 1, 16, 22, 27. May 7, 13, 14, 16, 19, 27. Apr 6, 10, 12, 16, 20, May 2, 17.  
During erection on board vessel - 18. 23, 24. 30, Jun 4, 5, 7, 11, 12, 16, 20, 21.  
Total No. of visits 31

Is the approved plan of main boiler forwarded herewith Yes

" " " donkey " " " " Yes

Dates of Examination of principal parts—Cylinders 2.5.23 Slides 18.5.23 Covers 2.5.23 Pistons 18.5.23 Rods 18.5.23  
Connecting rods 18.5.23 Crank shaft 2.5.23 Thrust shaft 2.5.23 Tunnel shafts 2.5.23 Screw shaft 2.5.23 Propeller 6.4.23  
Stern tube 6.4.23 Steam pipes tested 10.6.23 Engine and boiler seatings 30.5.23 Engines holding down bolts 5.6.23  
Completion of pumping arrangements 21.6.23 Boilers fixed 5.6.23 Engines tried under steam 21.6.23  
Completion of fitting sea connections 6.4.23 Stern tube 6.4.23 Screw shaft and propeller 6.4.23  
Main boiler safety valves adjusted 16.6.23 Thickness of adjusting washers S. 3/8 P 3/8  
Material of Crank shaft Steel Identification Mark on Do. LLOYDS NO 57 J.H.M. Material of Thrust shaft Steel Identification Mark on Do. LLOYDS NO 57 J.H.M.  
Material of Tunnel shafts do Identification Marks on Do. DO. Material of Screw shafts do Identification Marks on Do. DO.  
Material of Steam Pipes 1/2" Copper 4" Bore x 6" dia. Test pressure 400 lbs per sq in

Is an installation fitted for burning oil fuel no

Is the flash point of the oil to be used over 150°F.

Have the requirements of Section 49 of the Rules been complied with

Is this machinery duplicate of a previous case  If so, state name of vessel

General Remarks (State quality of workmanship, opinions as to class, &c. The Engines & boiler of this vessel have been built under special survey & in accordance with the approved plans and the Rule requirements. The materials & workmanship are good. The engines & boiler have been satisfactorily secured on board, tried under working conditions & found in order. Safety valves adjusted as above & pumping arrangements found in order.  
The machinery is eligible in my opinion to have record in the Register Book of +L.M.C. 6.23.

Note: The engines of this vessel have one main feed & one main bilge pump. This arrangement was submitted, and agreed to in the Secretary's letter E. of 1.6.23.

**It is submitted that this vessel is eligible for THE RECORD. +L.M.C. 6.23. C.L.**

The amount of Entry Fee ... £ 2 : 0 :  
Special ... £ 24 : 0 :  
Donkey Boiler Fee ... £ : :  
Travelling Expenses (if any) £ : :  
When applied for, 3/7/1923.  
When received, 18/23

*John Thackeray*  
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute TUE. 10 JUL. 1923

TUE. AUG. 21 1923

Assigned + L.M.C. 6.23 C.L.

