

## REPORT ON MACHINERY.

No. 18174

Received at London Office WFO. 5 MAR. 1924

Date of writing Report 28 Feb 1924 When handed in at Local Office 29 Feb 1924 Port of Greenock

in Survey held at Port Glasgow Date, First Survey 23rd January Last Survey 22nd Feb 1924

g. Book. 475 on the SS "MALACHITE" (Number of Visits 9)

Master ✓ Built at Dordrecht By whom built N.V. Schep. v. J. Nedulap Tons { Gross 743 Net 328. When built 1920

Engines made at Dordrecht By whom made Penn & Bauduin when made 1920

Motors made at Dordrecht By whom made Penn & Bauduin when made 1920.

Registered Horse Power Owners W. Robertson Port belonging to Glasgow

Net Horse Power as per Section 28 116 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

GINES, &c.—Description of Engines Triple Expansion No. of Cylinders Three No. of Cranks 3

No. of Cylinders 15 1/2 x 25 1/2 x 40 3/4 Length of Stroke 27 Revs. per minute 90 Dia. of Screw shaft as per rule 8.8 as fitted 8 3/32 Material of screw shaft S ✓

the screw shaft fitted with a continuous liner the whole length of the stern tube No ✓ Is the after end of the liner made water tight

the propeller boss ✓ 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

are fitted, is the shaft lapped or protected between the liners ✓ Length of stern bush 37 ✓

No. of Tunnel shaft as per rule 7.45 as fitted 7 1/16 Dia. of Crank shaft journals as per rule 7.8 as fitted 8 1/32 Dia. of Crank pin 8 1/4 Size of Crank webs 3 x 5 1/2 Dia. of thrust shaft under

bars 7 15/16 Dia. of screw 10.4 Pitch of Screw 11.6 No. of Blades 4 State whether moveable No Total surface 32 sq. ft.

No. of Feed pumps 2 Diameter of ditto 2 3/8 Stroke 16 Can one be overhauled while the other is at work Yes ✓

No. of Bilge pumps 2 Diameter of ditto 2 3/4 Stroke 16 Can one be overhauled while the other is at work Yes ✓

No. of Donkey Engines Two Sizes of Pumps 6 x 4 x 6 1/2 6 x 5 1/2 x 6 1/2 No. and size of Suctions connected to both Bilge and Donkey pumps

Engine Room 1 @ 2" Eng. Lin. 2 @ 2" Bl. Lin. In Holds, &c. 4 @ 2" ✓

No. of Bilge Injections 1 sizes 3 1/2 Connected to condenser, or to circulating pump Circ. p. Is a separate Donkey Suction fitted in Engine room & size 40-2" ✓

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 ✓

Are all connections with the sea direct on the skin of the ship Yes Are they Valves or Cocks Valves & cocks ✓

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 Bilge suction to hold, & tank suction How are they protected Below close ceiling ✓

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 ✓ Is it fitted with a watertight door ✓ worked from ✓

MANUFACTURERS, &c.—(Letter for record ✓) Manufacturers of Steel ✓

Total Heating Surface of Boilers 2149 Is Forced Draft fitted No No. and Description of Boilers Two Single ended Marine

Working Pressure 180 lbs/sq. in Tested by hydraulic pressure to ✓ Date of test 26.7.19 No. of Certificate ✓

Can each boiler be worked separately Yes ✓ Area of fire grate in each boiler 32 sq. ft. ✓ No. and Description of Safety Valves to

each boiler Double spring loaded Area of each valve 2.95 Pressure to which they are adjusted 180 lbs/sq. in Are they fitted with easing gear Yes ✓

Smallest distance between boilers or uptakes and bunkers or woodwork 5'-0" Mean dia. of boilers 12'-6" Length 12'-0" Material of shell plates S

Thickness 5/16 min. Range of tensile strength 28 tons Are the shell plates welded or flanged No ✓ Descrip. of riveting: cir. seams D.L.R. ✓

Long. seams T.R. 8.12.5 Diameter of rivet holes in long. seams 1.1 Pitch of rivets 7.16 Lap of plates or width of butt straps 17.32 ✓

Percentages of strength of longitudinal joint rivets 107 plate 84.5 Working pressure of shell by rules 191 Size of manhole in shell 11.8 x 15.75 ✓

Size of compensating ring 31.5 x 27.6 x 87 No. and Description of Furnaces in each boiler Two Corrugated Material S Outside diameter 36.5 ✓

Length of plain part top ✓ bottom ✓ Thickness of plates crown 5.51 bottom 5.51 Description of longitudinal joint weld ✓ No. of strengthening rings ✓

Working pressure of furnace by the rules 210 Combustion chamber plates: Material S Thickness: Sides .63 Back .63 Top .63 Bottom .83 ✓

Width of stays to ditto: Sides 7.5 x 7.1 Back 7.3 x 7.3 Top 7.1 x 7.8 If stays are fitted with nuts or riveted heads Working pressure by rules 171

Material of stays S Area at smallest part 1.45 Area supported by each stay 53.0 Working pressure by rules 253 End plates in steam space:

Material S Thickness .905 Pitch of stays 5.75 x 4.9 How are stays secured Washers Working pressure by rules 224 lbs Material of stays S ✓

Area at smallest part 4.9 Area supported by each stay 235.0 Working pressure by rules 207 Material of Front plates at bottom S ✓

Thickness .905 Material of Lower back plate S Thickness .905 Greatest pitch of stays 19 Working pressure of plate by rules 310

Diameter of tubes 3 1/4 Pitch of tubes 4.25 x 4.25 Material of tube plates S Thickness: Front .905 Back .866 Mean pitch of stays 8.5

Pitch across wide water spaces 4.17 Working pressures by rules 190 Girders to Chamber tops: Material S Depth and

Thickness of girder at centre 6.6 x 1.5 Length as per rule 24.4 Distance apart 7.875 Number and pitch of stays in each 20 7.1 ✓

Working pressure by rules 204 Steam dome: description of joint to shell % of strength of joint

Diameter Thickness of shell plates Material Description of longitudinal joint Diam. of rivet holes

Pitch of rivets Working pressure of shell by rules Crown plates Thickness How stayed

SUPERHEATER. Type Date of Approval of Plan Tested by Hydraulic Pressure to

Date of Test Is a Safety Valve fitted to each Section of the Superheater which can be shut off from the Boiler

Diameter of Safety Valve Pressure to which each is adjusted Is Easing Gear fitted



IS A DONKEY BOILER FITTED?

No

If so, is a report now forwarded? ☒

SPARE GEAR. State the articles supplied:—

Two top end bolts & nuts, 2 bottom end bolts & nuts,  
2 main bearing bolts, 1 set of coupling bolts, set of feed & relief valves,  
quantity of assorted bolts & nuts, iron of various sizes. ☒

The foregoing is a correct description,

Manufacturer.

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

1924 January 23. 25. 28. 30. February 4. 8. 15. 19. 22.

9

Is the approved plan of main boiler forwarded herewith ☒

" " " donkey " " " ☒

Dates of Examination of principal parts—Cylinders 25.1.24 Slides 25.1.24 Covers 25.1.24 Pistons 25.1.24 Rods 25.1.24

Connecting rods 25.1.24 Crank shaft 25.1.24 Thrust shaft 25.1.24 Tunnel shafts ☒ Screw shaft 28.1.24 Propeller 28.1.24

Stern tube 25.1.24 Steam pipes tested 23.1.24 Engine and boiler seatings 28.1.24 Engines holding down bolts 25.1.24

Completion of pumping arrangements 25.1.24 Boilers fixed ☒ Engines tried under steam 19.2.24

Completion of fitting sea connections 25.1.24 Stern tube fastenings 25.1.24 Screw shaft and propeller ☒

Main boiler safety valves adjusted 19.2.24 Thickness of adjusting washers Port BL. P.V.  $\frac{21}{32}$  S.V.  $\frac{9}{8}$  Star BL. P.V.  $\frac{23}{32}$  S.V.  $\frac{17}{32}$

Material of Crank shaft S Identification Mark on Do. ☒ Material of Thrust shaft S Identification Mark on Do. ☒

Material of Tunnel shafts ☒ Identification Marks on Do. ☒ Material of Screw shafts S Identification Marks on Do. ☒

Material of Steam Pipes S.D. Seal Test pressure 540 lbs/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 No If so, state name of vessel ☒

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

The above machinery was not constructed under special survey.

The machinery and boilers have been examined throughout and found or put in good condition and of dimensions as stated, tried under steam and found satisfactory.

The machinery of this vessel is now in a good and efficient condition and eligible in my opinion to be classed L.M.C 2.24 with the notation of "Tail shaft last seen 09. 2.23."

Note:— The machinery & boilers were built under B.V. survey.

The amount of Entry Fee ... £ : : When applied for, 19  
Special ... £ : :  
Donkey Boiler Fee ... £ : :  
Travelling Expenses (if any) £ : : When received, 31.3.24

Committee's Minute

GLASGOW

4 MAR 1924

Assigned See attached report. YMT

S. F. Dorey.  
Engineer Surveyor to Lloyd's Register of Shipping.



© 2019

Lloyd's Register  
Foundation