

REPORT ON MACHINERY

No. 73225

Received at London Office WED JUN 23 1920

Date of writing Report 5th June 1920 When handed in at Local Office 5th June 1920 Port of Newcastle on Tyne
No. in Survey held at 1st June 1920 Date, First Survey 1st April 19 Last Survey 1st June 1920
Reg. Book. on the Garmula (Number of Visits 60) Gross 5254

Master Built at Hebburn By whom built Palmes Shipbuilding & Iron Works Ltd When built 1920

Engines made at Jarron By whom made Palmes Shipbuilding & Iron Works Ltd when made 1920

Boilers made at Jarron By whom made do do when made 1920

Registered Horse Power 517 Owners British India Steam Navigation Co Ltd Port belonging to Glasgow

Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted yes

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

Dia. of Cylinders 27" 44" 73" Length of Stroke 48" Revs. per minute 77 Dia. of Screw shaft as per rule 14.66" Material of screw shaft as fitted 15 1/2" Steel

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

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

shafts are fitted, is the shaft lapped or protected between the liners ✓ Length of stern bush 5.0 1/2"

Dia. of Tunnel shaft as per rule 13.33" Dia. of Crank shaft journals as per rule 14" Dia. of Crank pin 14 1/2" Size of Crank webs 25" x 9" Dia. of thrust shaft under

bars 14 3/4" Dia. of screw 17-6 Pitch of Screw 16.6" No. of Blades 4 State whether moceable yes Total surface 102.5 sq ft

No. of Feed pumps 2 Diameter of ditto 4" Stroke 24" Can one be overhauled while the other is at work yes

No. of Bilge pumps 2 Diameter of ditto 4" Stroke 24" Can one be overhauled while the other is at work yes

No. of Donkey Engines Four Sizes of Pump One 10 1/2" x 8" x 21" No. and size of Suctions connected to both Bilge and Donkey pumps

Engine Room Four 3 1/2" diameter " 8 1/2" 7" Holds, &c. No 3 1/2" in Nos 1, 2 + 3, one

1 1/2" in No 4 and one 3" in tunnel well.

No. of Bilge Injections 1 sizes 13" Connected to condenser, or to circulating pump pump Is a separate Donkey Suction fitted in Engine room & size yes, 3 1/2"

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 and on effluent ✓ 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 Main discharges below all others 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

How are they protected Hood bearing.

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 Engine room top platform

MANUFACTURERS, &c.—(Letter for record S) Manufacturers of Steel J. Spencer & Sons 3.S.B.

Heating Surface of Boilers 7668 sq ft Is Forced Draft fitted yes No. and Description of Boilers 3 Single Cored

Working Pressure 180 lbs Tested by hydraulic pressure to 360 lbs Date of test one 23/12/19 No. of Certificate 9338

Can any boiler be worked separately yes Area of fire grate in each boiler 63.3 sq ft No. and Description of Safety Valves to

each boiler direct spring Area of each valve 9.62 sq in Pressure to which they are adjusted 185 lbs per sq in Are they fitted with easing gear yes

Distance between boilers or uptakes and bunkers or woodwork 30" Mean dia. of boilers 15.6" Length 11.6" Material of shell plates Steel

Range of tensile strength 29,322 tons Are the shell plates welded or flanged No Descrip. of riveting: cir. seams 2R Lap

Diameter of rivet holes in long. seams 15/16" Pitch of rivets 9/8" Lap of plates or width of butt straps 19 1/2"

Working pressure of shell by rules 182 lbs Size of manhole in shell end 16" x 12"

No. and Description of Furnaces in each boiler 3 Dightons Material Steel Outside diameter 50 3/8"

Thickness of plates top 19/32" crown 19/32" Description of longitudinal joint Helled No. of strengthening rings none

Working pressure of furnace by the rules 188 Combustion chamber plates: Material Steel Thickness: Sides 23/32" Back 11/16" Top 23/32" Bottom 23/32"

Stays to ditto: Sides 11 1/2" x 5 1/2" Back 10 1/2" x 5 1/2" Top 10 5/8" x 9 1/2" If stays are fitted with nuts or riveted heads Nuts made Working pressure by rules 150 lbs

Area at smallest part 2.480 sq in Area supported by each stay 98.0 sq in Working pressure by rules 219 End plates in steam space:

Thickness 1 1/32" Pitch of stays 20 1/2" x 2 1/2" How are stays secured Double nuts Working pressure by rules 192 Material of stays Steel

Area supported by each stay 4.46 sq in Working pressure by rules 199 Material of Front plates at bottom Steel

Material of Lower back plate Steel Thickness 27/32" Greatest pitch of stays 13 5/8" x 5 3/8" Working pressure of plate by rules 157

Pitch of tubes 2 1/4" Pitch of tubes 1 1/2" x 3 7/8" Material of tube plates Steel Thickness: Front 31/32" Back 3/4" Mean pitch of stays 9 7/8"

Working pressures by rules 181 lbs per sq in Girders to Chamber tops: Material Steel Depth and

Distance apart 10 7/8" Number and pitch of stays in each three, 9/4"

Working pressure by rules 187 lbs Steam dome: description of joint to shell None % of strength of joint ✓

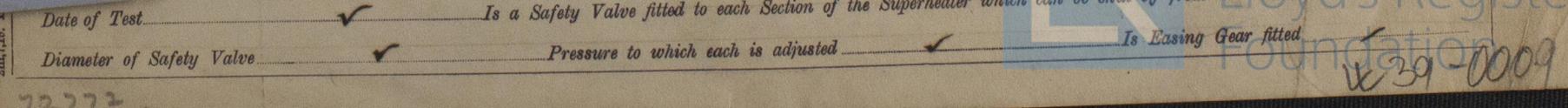
Thickness of shell plates ✓ Material ✓ Description of longitudinal joint ✓ Diam. of rivet holes ✓

Working pressure of shell by rules ✓ Crown plates ✓ Thickness ✓ How stayed ✓

TESTER. Type None 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 ✓



72772

W 39 0009

IS A DONKEY BOILER FITTED? *Yes*

If so, is a report now forwarded?

SPARE GEAR.

State the articles supplied: - 2 connecting rod top and 2 bottom end bolts & nuts, 2 main bearing bolts & nuts, 6 coupling bolts and nuts, one suction & one discharge valve for feed pumps, one suction and one discharge valve for bilge pumps, 3 main and 3 donkey check valves, assorted bolts and nuts, a few bars of iron, one set of main bearing bushes, one pair top and one pair bottom end bushes, one pair eccentric straps, a propeller shaft, etc.

The foregoing is a correct description,

Palmers Shipbuilding & Iron Co., Ltd.

Manufacturer.

General Manager, Engine Works.

Dates of Survey while building: During progress of work in shops - - - Apr. 14, 16, May 14, 28, Jun. 2, 18, Jul. 3, 10, 11, 25, Aug. 6, 11, 15, 22, 29, Sep. 8, 17, 24, Oct. 6, 7, 10, 15, 16, 20, 25, 30, 31, Nov. 5, 6, 17, Dec. 9, 11, 18, 19, 23, 24, 30, 1922, Jan. 9, 23, Feb. 3, 11, Mar. 10, 23, Apr. 8, 12, 13, 14, 15, 20, 21, 24, 29, May, 3, 6, 13, 19, 21, 28, Jun. 1, 1920. Total No. of visits 60

Is the approved plan of main boiler forwarded herewith *No*

Is the approved plan of main boiler forwarded herewith *None*

Dates of Examination of principal parts - Cylinders *1/6, 10/7/19*, Slides *1/6, 20/10/19*, Covers *1/6, 20/10/19*, Pistons *7/9, 3/11/19*, Rods *17/9, 3/11/19*, Connecting rods *7/9, 3/11/19*, Crank shaft *17/9, 19/11/19*, Thrust shafts *17/9, 19/11/19*, Tunnel shafts *15/11, 10/12/19*, Screw shaft *2/5, 17/9*, Propeller *17/9, 19/11/19*, Stern tube *3/11/19*, Steam pipes tested *12/4, 29/4/20*, Engine and boiler seatings *15/4/20*, Engines holding down bolts *3/5, 12/5/20*, Completion of pumping arrangements *21/5/20*, Boilers fixed *21/5/20*, Engines tried under steam *21/5/20*, Completion of fitting sea connections *15/4, 22/4, 29/4/20*, Stern tube *15/4/20*, Screw shaft and propeller *15/4/20*, Main boiler safety valves adjusted *21/5/20*, Thickness of adjusting washers *PB 17/32 - 27/64, CB 27/64 - 17/32, SB 19/32 - 35/64*, Material of Crank shaft *Stul*, Identification Mark on Do. *5/9/19 6M*, Material of Thrust shaft *Stul*, Identification Mark on Do. *5/9/19 6M*, Material of Tunnel shafts *do*, Identification Marks on Do. *do*, Material of Screw shafts *do*, Identification Marks on Do. *do*, Material of Steam Pipes *Stul & Copper*, Test pressure *540 - 360 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 *Yes* If so, state name of vessel *Gamaria (No. 72772)*

General Remarks (State quality of workmanship, opinions as to class, &c. *The machinery of this vessel has been built under special survey. The materials & workmanship are of good quality, it has been securely fitted on board and satisfactorily tested under full steam.*

The machinery of this vessel is in my opinion eligible for record 5. L.M.C. 6. 20 (mixed) in the register book.

See forging & casting and steam pipe reports, 2 invoices for furnaces and stul test invoices now forwarded.

It is submitted that this vessel is eligible for THE RECORD. + L.M.C. 6. 20 F. D

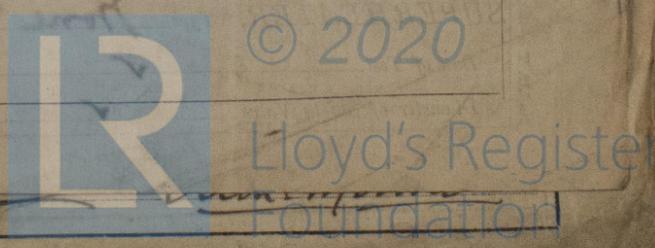
H.P.G. 25/6/20

The amount of Entry Fee ... £ : : Special ... £ 116 : 15 : Donkey Boiler Fee ... £ : : Travelling Expenses (if any) £ : : When applied for, 22 JUN 1920 When received, 26/7/20

George Murdoch
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute TUE. JUN. 29 1920
Assigned + L.M.C. 6. 20 F. D.

CERTIFICATE WRITTEN.



NEWCASTLE-ON-TYNE

Certificate (if required) to be sent to The Surveyors are requested not to write on or below the space for Committee's Minute.

Surveyor's Signature