

REPORT ON MACHINERY

No. 73225

Received at London Office WED JUN 13 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 *James Hobburn* Date, First Survey *1st April 1919* Last Survey *1st June 1920*

Reg. Book *SS Carmula* (Number of Visits *60*) Gross *5254* Tons Net *3254*

Master *James Hobburn* Built at *Hobburn* By whom built *Palmer Shipbuilding & Iron Co Ltd* When built *1920*

Engines made at *Jarvis* By whom made *Palmer Shipbuilding & Iron Co Ltd* when made *1920*

Boilers made at *Jarvis* 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*

a. of Cylinders *27" 44" 73"* Length of Stroke *48"* Revs. per minute *77* Dia. of Screw shaft *as per rule 14.66"* Material of *Steel*

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

are fitted, is the shaft lapped or protected between the liners *✓* Length of stern bush *5' 0 1/2"*

a. 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 moveable *Yes* Total surface *102.5 sq ft*

of Feed pumps *2* Diameter of ditto *4"* Stroke *24"* Can one be overhauled while the other is at work *Yes*

of Bilge pumps *2* Diameter of ditto *4"* Stroke *24"* Can one be overhauled while the other is at work *Yes*

of Donkey Engines *Four* Sizes of Pumps *10 1/2" 8" 5" 4"* No. and size of Suctions connected to both Bilge and Donkey pumps

Engine Room *Four 3 1/2" diameter* " *8 1/2" 7" 4"* In Holds, &c. *No 3 1/2" in Nos 1, 2 & 3, one*

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

Bilge Injections *1* sizes *13"* Connected to condenser, or to circulating pump *Yes* Is a separate Donkey Suction fitted in Engine room & size *Yes, 3 1/2"*

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 *✓*

all connections with the sea direct on the skin of the ship *and in effluent* Are they Valves or Cocks *Both*

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 *all others above*

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*

pipes are carried through the bunkers *forward bilge pipes* How are they protected *Hood boxing*

all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times *Yes*

all Bilge Suction Pipes, Cocks, and Valves arranged so as to prevent any communication between the sea and the bilges *Yes*

Screw Shaft Tunnel watertight *Yes* Is it fitted with a watertight door *Yes* worked from *Engine room top platform*

ERS, &c.—(Letter for record *S*) Manufacturers of Steel *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*

ing Pressure *180 lbs* Tested by hydraulic pressure to *360 lbs* Date of test *18/12/19* No. of Certificate *9338*

each 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 *one direct spring* Area of each valve *9.62 sq in* Pressure to which they are adjusted *185 lbs* 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 *2 R 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"*

ages of strength of longitudinal joint *88.3* Working pressure of shell by rules *182 lbs* Size of manhole in shell *16" x 12"*

Compensating ring *flanged spigot* No. and Description of Furnaces in each boiler *3 Dightons* Material *Steel* Outside diameter *50 3/8"*

plain part *top* Thickness of plates *19/32"* Description of longitudinal joint *Welded* No. of strengthening rings *None*

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"*

days to ditto: Sides *11 1/32" x 8 1/2"* Back *10 1/2" x 8 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 *180 lbs*

of stays *Steel* Area at smallest part *2.48 sq in* Area supported by each stay *9.6 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*

smallest part *8.48 sq in* 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 1/2"* Working pressure of plate by rules *157*

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

cross wide water spaces *13 5/8"* Working pressures by rules *181 lbs* Girders to Chamber tops: Material *Steel* Depth and

of girder at centre *10" x 1 1/2"* Length as per rule *35 7/16"* Distance apart *10 7/8"* Number and pitch of stays in each *None, 9/4"*

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 *✓*

EATER. 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 *✓*

IS A DONKEY BOILER FITTED? *No*

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 chuck 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,

For *Palmar 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. 8, 9, 23, Feb. 3, 11, Mar. 10, 23, Apr. 6, 12, 13, 14, 15, 20, 21, 24, 29, May, 3, 6, 13, 19, 21, 28, Jun. 1.*
During erection on board vessel --
Total No. of visits *60*

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

" " " donkey " " *None*

Dates of Examination of principal parts—Cylinders *18/4, 18/7/19, 18/10/19* Slides *18/4, 18/10/19* Covers *18/4, 18/10/19* Pistons *18/4, 18/10/19* Rods *18/4, 18/10/19*

Connecting rods *18/4, 18/10/19* Crank shaft *18/4/19* Thrust shaft *18/4/19* Tunnel shafts *18/4, 18/10/19* Screw shaft *18/4, 18/10/19* Propeller *18/4/19*

Stern tube *18/4/19* Steam pipes tested *18/4, 29/4/20* Engine and boiler seatings *18/4/20* Engines holding down bolts *18/4, 18/10/19*

Completion of pumping arrangements *21/5/20* Boilers fixed *21/5/20* Engines tried under steam *21/5/20*

Completion of fitting sea connections *18/4, 28/4, 29/4/20* Stern tube *18/4/20* Screw shaft and propeller *18/4/20*

Main boiler safety valves adjusted *21/5/20* Thickness of adjusting washers *PB 7/32" 27/64" CB 37/64" 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 lb 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 as L.M.C. 6.20 (mixed) in the register book.

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

It is submitted that this vessel is eligible for

THE RECORD. + L.M.C. 6.20 F.D

25/6/20

J.M.

The amount of Entry Fee ... £ : : When applied for, *22 JUN 1920*

Special ... £ : : *116 : 15*

Donkey Boiler Fee ... £ : : When received, *26/7/20*

Travelling Expenses (if any) £ : : *28*

Committee's Minute *TUE. JUN. 29 1920*

Assigned *+ L.M.C. 6.20 F.D.*

George Hurdock

Engineer Surveyor to Lloyd's Register of Shipping.

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