

REPORT ON MACHINERY.

No. 73501.

Received at London Office *18 Oct 1920*

of writing Reports *3rd Sept 1920* When handed in at Local Office *3rd Sept 1920* Port of *Newcastle on Tyne*

in Survey held at *Farjon on Tyne* Date, First Survey *22 Oct 1918* Last Survey *30th Aug 1920*

g. Book. *Steel* on the *S. S. Rhode Hagelund.* (Number of Visits *6*) Gross *5854* Tons Net *3650*

Master *Vorgensen* Built at *Sunderland* By whom built *James Laing & Son* When built *1920*

Engines made at *Farjon on Tyne* By whom made *Palmer Shipbuilding & Iron Co Ltd* when made *1920*

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

Registered Horse Power *517* Owners *W. Withelm* Port belonging to *Tomburg*

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*

No. of Cylinders *27 44 + 73* Length of Stroke *48"* Revs. per minute *77* Dia. of Screw shaft *as per rule 14 3/4"* 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 *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

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

No. of Tunnel shaft *as per rule 13 3/32* Dia. of Crank shaft journals *as per rule 14 1/2"* Dia. of Crank pin *14 1/2"* Size of Crank webs *28 x 9"* Dia. of thrust shaft under

bars *14 3/4"* Dia. of screw *18-0"* Pitch of Screw *16-9"* No. of Blades *4* State whether moveable *No* Total surface *93 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 Pumps *one pair 10 1/2 x 8 x 21" feed* No. and size of Suctions connected to both Bilge and Donkey pumps

Engine Room *four 3 1/2" diameter* In Holds, &c. *See Sunderland report.*

No. of 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"*

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*

Are all pipes carried through the bunkers *See report* How are they protected *See report*

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 *See report* Is it fitted with a watertight door *See report* worked from *See report*

MANUFACTURERS, &c.—(Letter for record *S*) Manufacturers of Steel *J. Spencer & Son Ltd*

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

Working Pressure *180 lb* Tested by hydraulic pressure to *360 lb* Date of test *12/3/20* No. of Certificate *9379*

Can 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 *See report* Are they fitted with easing gear *yes*

Is the distance between boilers or uptakes and bunkers or woodwork *See report* Inside dia. of boilers *15-6"* Length *11-6"* Material of shell plates *Steel*

Thickness *1 1/4"* Range of tensile strength *28/32 tons* Are the shell plates welded or flanged *No* Descrip. of riveting: cir. seams *2 R Lap*

Diagonal seams *Double Strap* Diameter of rivet holes in long. seams *1 5/16"* Pitch of rivets *9/8"* Lap of plates or width of butt straps *19 1/2"*

Percentages of strength of longitudinal joint *88.3* Working pressure of shell by rules *182 lb* Size of manhole in end *16" x 12"*

No. of compensating ring *flanged* No. and Description of Furnaces in each boiler *3 Dighton* Material *Steel* Outside diameter *50 7/8"*

Length of plain part *top 19 1/32"* Thickness of plates *crown 19 1/32"* Description of longitudinal joint *Welded* No. of strengthening rings *yes*

Working pressure of furnace by the rules *188* Combustion chamber plates: Material *Steel* Thickness: Sides *2 3/32"* Back *4/16"* Top *2 3/32"* Bottom *2 3/32"*

Pitch of stays to ditto: Sides *1 5/8" x 8/8"* Back *9/2" x 9/8"* Top *1 5/8" x 9/8"* Are stays fitted with nuts or riveted heads *Nuts inside* Working pressure by rules *180*

Material of stays *Steel* Area at smallest part *3.75 sq in* Area supported by each stay *104 sq in* Working pressure by rules *219* End plates in steam space:

Material *Steel* Thickness *1 1/32"* Pitch of stays *20/22 x 21/2"* How are stays secured *Double nuts* Working pressure by rules *192* Material of stays *Steel*

Area at smallest part *8.45 sq in* Area supported by each stay *446 sq in* Working pressure by rules *199* Material of Front plates at bottom *Steel*

Thickness *31/32"* Material of Lower back plate *Steel* Thickness *27/32"* Greatest pitch of stays *3 5/8" x 8 3/4"* Working pressure of plate by rules *187*

Diameter 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"*

Chamber across wide water spaces *13 7/8"* Working pressures by rules *194 lb* Girders to Chamber tops: Material *Steel* Depth and

Thickness of girder at centre *10 1/4" x 1 1/2"* Length as per rule *35 7/16"* Distance apart *10 5/8"* Number and pitch of stays in each *three, 9 1/4"*

Working pressure by rules *196 lb* Steam dome: description of joint to shell *None* % of strength of joint *yes*

Material *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*

9910-2222M

IS A DONKEY BOILER FITTED?

If so, is a report now forwarded?

SPARE GEAR. State the articles supplied:

Two top and two bottom end bolts & nuts.
a set of coupling bolts & nuts a set of main bearing bolts & nuts
a set of feed & bilge pump valves, a few bars of iron and a
quantity of assorted bolts & nuts.

The foregoing is a correct description,

Palmer's Shipbuilding & Iron Co., Ltd.

S. Kemp.

Manufacturer.

General Manager, Engine Works.

Dates of Survey while building
During progress of work in shops - 1918. Oct. 22, 1919. Feb. 24, Sept. 17, Oct. 15, 16, 20, 23, 28, 30, 31, Nov. 3, 9, 12, 14, 18, 20, Dec. 2, 5.
During erection on board vessel - 9. 11. 19. Jan. 23, Feb. 3, 6, 11, 12, 19. Mar. 1, 4, 5, 12, 19, 23, 31, Apr. 1, 14, 15, 21, 30. May 5, 6, 13, Jun. 1, 11, 14.
Total No. of visits Jul. 5, 7, 13, 14, 20 Aug. 3, 6, 12, 13, 19, 20, 24, 25, 30. Is the approved plan of main boiler forwarded herewith? Yes

Dates of Examination of principal parts - Cylinders 2/12/19, 2/12/20 Slides 19/2/20 Covers 19/2/20 Pistons 19/2/20 Rods 19/2/20

Connecting rods 19/2/20 Crank shaft 5/12/19 Thrust shaft 5/12/19 Tunnel shafts 24/2/20 Screw shaft 7/7/20 Propeller 1/6/20

Stern tube 14/4/20 Steam pipes tested 2/9/20 Engine and boiler seatings 12/5/20 Engines holding down bolts 30/5/20

Completion of pumping arrangements Sld report Boilers fixed Sld report Engines tried under steam Sld report

Completion of fitting sea connections do Stern tube Sld report Screw shaft and propeller 12/8/20

Main boiler safety valves adjusted Sld report Thickness of adjusting washers Sld report

Material of Crank shaft Steel Identification Mark on Do. 7/7/20 Material of Thrust shaft Steel Identification Mark on Do. GM 7/7/20

Material of Tunnel shafts do Identification Marks on Do. do Material of Screw shafts do Identification Marks on Do. do

Material of Steam Pipes Steel & Copper Test pressure 540 & 360 lbs per sq. in. respectively

Is an installation fitted for burning oil fuel Sld report Is the flash point of the oil to be used over 150° F. Sld Report

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

Is this machinery duplicate of a previous case? Not quite, so, state name of vessel. Engines Standard B, Boilers practically do.

General Remarks (State quality of workmanship, opinions as to class, &c.) The engines and boilers of this

vessel have been built under special survey they have been placed on board

at Jarrow and the vessel has gone to Sunderland where the survey is

to be completed. The workmanship & materials are of good quality.

To complete the survey the main engines and shafting plummer

blocks, the main boilers and the auxiliaries require to be secured on

board, all steams and other pipe connections be made, the oil burning

installation be fitted, the main engines and the auxiliaries be tried

under steam and the spare gear be checked.

When the survey is completed the machinery of this vessel will be

eligible for record: L M C with date and fitted for oil fuel burning.

The boiler plan, shafting, and castings reports and boiler minies

are now forwarded.

Drawings No 27354 arrangements of heating coils and position of fittings in settling tanks

Drawings 27271 & 27272 for arrangement of oil fuel installation

Copy of the drawings letter dated 21/5/20 re oil fuel installation have been forwarded to

The amount of Entry Fee £ 3 When applied for.

Special £ 45 : 11

Donkey Boiler Fee £ :

Travelling Expenses (if any) £ :

Committee's Minute TUE. NOV. 9 1920

Assigned

Engineer Surveyor to Lloyd's Register of Shipping.

George Murdoch

7 SEP 1920

28/11/20

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