

Rpt. 4.

REPORT ON MACHINERY

No. 17706
WED. SEP. 15 1920

Received at London Office

Date of writing Report 10th Sept 1920 When handed in at Local Office 11th Sept 1920 Port of *Greenock*No. in Survey held at *Greenock & Port Glasgow*. Date, First Survey 24th March 1919 Last Survey 10th Sept 1920
Reg. Book. on the *5th MAUDIE*. (Number of Visits 107)Master *M. Hanson*. Built at *Port Glasgow*. By whom built *Lithgow Ltd (N^o 725)* Tons { Gross 4597.
Net 2874
When built 1920Engines made at *Greenock*. By whom made *Rankin & Blackmore Ltd (N^o 363)* when made 1920.Boilers made at *Greenock*. By whom made *Rankin & Blackmore Ltd (N^o 363)* when made 1920.Registered Horse Power Owners *Aktins & Co Ltd* Port belonging to *Trusting*.Nom. Horse Power as per Section 28 488. 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 26" - 43" - 70" Length of Stroke 48" Revs. per minute 75. Dia. of Screw shaft as per rule 14-68" Material of screw shaft 3.
as fitted 15"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 tightin the propeller boss *Yes*. If the liner is in more than one length are the joints burned *Joint* If the liner does not fit tightly at the partbetween the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive *✓* If twoliners are fitted, is the shaft lapped or protected between the liners *✓* Length of stern bush 62"Dia. of Tunnel shaft as per rule 13-03" Dia. of Crank shaft journals as per rule 13-68" Dia. of Crank pin 13 3/4" Size of Crank webs 25 1/2" x 8 3/4" Dia. of thrust shaft under
collars 13 3/4" Dia. of screw 17-9" Pitch of Screw 17-6" No. of Blades 4 State whether moveable *No*. Total surface 100 Sqft.No. of Feed pumps 1 Diameter of ditto 4" Stroke 27" *1. Watson Pump. 7" x 21"* Can one be overhauled while the other is at work *Yes*.No. of Bilge pumps 2 Diameter of ditto 4" Stroke 27" Can one be overhauled while the other is at work *Yes*.

No. of Donkey Engines 3. Sizes of Pumps 12 x 12, 5 1/2 x 8, 4 1/4 x 6 No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room 4-3 1/2" Bon. Tunnel 1-2 1/2" Bon. In Holds, &c. *Forward Holds 4-3 1/2" Bon**Aft. Holds 4-3 1/2" Bon.*No. of Bilge Injections *one* sizes 7 Connected to condenser, or to circulating pump *C.P.* 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 *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 *None* How are they protected *✓*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 *Top Platform Eng Room*.BOILERS, &c.—(Letter for record *S.*) Manufacturers of Steel *W. Rankin & Co Ltd & The Steel Co of Scotland Ltd*Total Heating Surface of Boilers 7345 *Sq* Is Forced Draft fitted *Yes*. No. and Description of Boilers *Three Cylr Multi Single End*

Working Pressure 180 lbs. Tested by hydraulic pressure to 360 lbs. Date of test 14-6-20 No. of Certificate 1463.

Can each boiler be worked separately *Yes*. Area of fire grate in each boiler 59.5 *Sqft*. No. and Description of Safety Valves toeach boiler *Two Spring*. Area of each valve 11.04 *Sq* Pressure to which they are adjusted 185 lbs. Are they fitted with easing gear *Yes*.Smallest distance between boilers *on stowage* 9'-3" Mean dia. of boilers 15'-0" Length 11'-6" Material of shell plates *S.*Thickness 1 3/16" Range of tensile strength 28 1/2 to 32 Tons Are the shell plates welded or flanged *No*. Descrip. of riveting: cir. seams *LAP D.R.*long. seams *DRS/T.R.* Diameter of rivet holes in long. seams 1 5/16" Pitch of rivets 9 1/8" width of butt straps 18 1/2"

Per centages of strength of longitudinal joint rivets 92.7 Working pressure of shell by rules 181 lbs. Size of manhole in shell 16" x 12"

plate 85.6. Size of compensating ring 20 1/2" x 26 1/2" x 1 3/16" No. and Description of Furnaces in each boiler *3 Dighton* Material *S.* Outside diameter 47 1/4"Length of plain part top *✓* Thickness of plates crown 9/16" Description of longitudinal joint *Weld.* No. of strengthening rings *✓*bottom *✓* Working pressure of furnace by the rules 186 lbs. Combustion chamber plates: Material *S.* Thickness: Sides 4 1/64" Back 4 1/64" Top 4 1/64" Bottom 3 1/4"Pitch of stays to ditto: Sides 9 1/8" x 8 1/2" Back 9 1/4" x 8 3/8" Top 9 1/4" x 8 3/8" If stays are fitted with nuts or riveted heads *Nuts* Working pressure by rules 182 lbs.Material of stays *S.* Area at smallest part 1.77 *Sq* Area supported by each stay 77.5 *Sq* Working pressure by rules 183 lbs. End plates in steam space:Material *S.* Thickness 1 5/16" Pitch of stays 22" x 18 7/8" How are stays secured *DN & W.* Working pressure by rules 186 lbs. Material of stays *S.*Area at smallest part 7.24 *Sq* Area supported by each stay 44.5-25 *Sq* Working pressure by rules 182 lbs. Material of Front plates at bottom *S.*Thickness 1 3/16" Material of Lower back plate *S.* Thickness 1 3/16" Greatest pitch of stays 13 1/4" x 8 3/8" Working pressure of plate by rules 186 lbs.Diameter of tubes 2 3/4" Pitch of tubes 4" x 3 3/8" Material of tube plates *S.* Thickness: Front 1 3/16" Back 3/4" Mean pitch of stays 9 1/8"Pitch across wide water spaces 13 1/2" Working pressures by rules 222 lbs. Girders to Chamber tops: Material *S.* Depth and

thickness of girder at centre 9 3/4" x 1 1/2" Length as per rule 34 3/64" Distance apart 9 1/4" Number and pitch of stays in each 3 @ 8 3/8"

Working pressure by rules 181 lbs. Steam dome: description of joint to shell *None*. % 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 *✓*

003474-003478-0194

IS A DONKEY BOILER FITTED? *no.*

If so, is a report now forwarded? ☒

SPARE GEAR. State the articles supplied:— *Two top and bottom end bolts and nuts.
Two main bearing bolts and nuts. Set of coupling bolts and nuts.
Set of Air. Feed and Bilge pump valves. Set of piston rings.
A quantity of assorted bolts and nuts and iron of various sizes.
Propeller and Tail shaft.*

The foregoing is a correct description,

RANKIN & BLACKMORE, LTD.,
Manufacturer.

Director.
Dates of Survey while building
During progress of work in shops --
During erection on board vessel --
Total No. of visits
107
Is the approved plan of main boiler forwarded herewith *Yes.*
" " " donkey " " " ☒

Dates of Examination of principal parts—Cylinders *5-3-20* Slides *8-4-20* Covers *5-3-20* Pistons *8-4-20* Rods *10-12-19*.
Connecting rods *20-12-19*. Crank shaft *18-3-20* Thrust shaft *26-3-20* Tunnel shafts *26-7-20* Screw shaft *9-6-20* Propeller *9-6-20*.
Stern tube *31-5-20*. Steam pipes tested *26-8-20* Engine and boiler seatings *16-7-20* Engines holding down bolts *25-8-20*.
Completion of pumping arrangements *18-8-20* Boilers fixed *1-9-20*. Engines tried under steam *10-9-20*.
Completion of fitting sea connections *14-7-20*. Stern tube *14-7-20*. Screw shaft and propeller *13-8-20*.
Main boiler safety valves adjusted *6-9-20*. Thickness of adjusting washers *P³/₈ P⁵/₁₆ P³/₈ S²³/₁₆ P²⁹/₁₆ S¹³/₃₂*.
Material of Crank shaft *I.S.* Identification Mark on Do. *503 J.R.* Material of Thrust shaft *I.S.* Identification Mark on Do. *503 J.R.*
Material of Tunnel shafts *I.S.* Identification Marks on Do. *503 W.L.* Material of Screw shafts *I.S.* Identification Marks on Do. *503 J.R.*
Material of Steam Pipes *W. Iron. (Lap-welded)* Test pressure *600 lbs.*
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 Engines and Boilers have been constructed under Special Survey. The Materials & Workmanship good. The Engines and Boilers have been satisfactorily installed in the vessel & examined under full steam & found satisfactory. This Vessel is eligible in our opinion to have the record of H.L.M.C. 9-20, & F.D. in the Register Book*

It is submitted that
this vessel is eligible for
THE RECORD + L.M.C. 9-20 F.D.

REU
17/9/20
ARR

The amount of Entry Fee ... £ *3 : 0 : 0* When applied for.
Special ... £ *44 : 8 : 0* 9th Sept 1920
Donkey Boiler Fee ... £ : : When received.
Travelling Expenses (if any) £ : : 10/9/1920

Committee's Minute GLASGOW 14 SEP 1920

Assigned *+ L.M.C. 9.20. F.D.*

MACHINERY CERT.
WRITTEN 15/9/20

J. Robinson & W. Lane
Engineer Surveyor to Lloyd's Register of Shipping.



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Foundation