

REPORT ON MACHINERY.

No. 76306

Received at London Office SAT. JAN. 6 1923

Date of writing Report *Dec 2nd 1922* When handed in at Local Office *Jan 5th 1923* Port of *NEWCASTLE-ON-TYNE*

No. in Survey held at *Newcastle-on-Tyne* Date, First Survey *Aug 10th 1922* Last Survey *Jan 4th 1923*

Reg. Book. *0573* on the *Steel screw steamer "Rotha"* (Number of Visits *26*) Tons { Gross *1400* Net *993*

Master *[blank]* Built at *Newcastle* By whom built *Wood Skinner* When built *1922*

Engines made at *Newcastle-on-Tyne* By whom made *Both Eastern Marine & Co Ltd* when made *1922*

Boilers made at *do* By whom made *do* when made *1922*

Registered Horse Power *208* Owners *The Sharp & R. Co Ltd* Port belonging to *Newcastle*

Nom. Horse Power as per Section 28 *208* 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 *20-33-54* Length of Stroke *36* Revs. per minute *76* Dia. of Screw shaft *as per rule 11.4" as fitted 11.4"* Material of screw shaft *Iron*

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 in the propeller boss *Yes* If the liner is in more than one length are the joints burned *no* 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 *no* If two liners are fitted, is the shaft lapped or protected between the liners *no* Length of stern bush *4-1"*

Dia. of Tunnel shaft *as per rule 9.93" as fitted 10.4"* Dia. of Crank shaft journals *as per rule 10.4" as fitted 10.4"* Dia. of Crank pin *10.4"* Size of Crank webs *7.4" x 7.8"* Dia. of thrust shaft under collars *10.4"* Dia. of screw *4-3"* Pitch of Screw *14-3"* No. of Blades *4* State whether moveable *no* Total surface *61.5"*

No. of Feed pumps *2* Diameter of ditto *3.5"* Stroke *20"* Can one be overhauled while the other is at work *Yes*

No. of Bilge pumps *2* Diameter of ditto *3.5"* Stroke *20"* Can one be overhauled while the other is at work *Yes*

No. of Donkey Engines *3* Sizes of Pumps *Ballast 9" x 11" x 10" Feed 5.5" x 5.5" x 5" Air 7" x 5" x 8"* No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room *2-3" stokehold 2-3"* In Holds, &c. *2-3" fore hold - 2-3" after hold*

No. of Bilge Injections / sizes *6"* Connected to condenser, or to circulating pump *Yes* Is a separate Donkey Suction fitted in Engine room & size *2-3"*

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 *none*

Are all connections with the sea direct on the skin of the ship *Yes* Are they Valves or Cocks *Both main & bilge below.*

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 *Reddest 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 *no*

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 *Upper platform.*

BOILERS, &c.—(Letter for record *do*) Manufacturers of Steel *John Spencer*

Total Heating Surface of Boilers *3440 sq ft* Is Forced Draft fitted *no* No. and Description of Boilers *2 Single Ended*

Working Pressure *180 psi* Tested by hydraulic pressure to *320 psi* Date of test *11.10.22* No. of Certificate *9692*

Can each boiler be worked separately *Yes* Area of fire grate in each boiler *49.5 sq ft* No. and Description of Safety Valves to each boiler *2 Spring loaded* Area of each valve *5.93 sq in* Pressure to which they are adjusted *185 psi* Are they fitted with easing gear *Yes*

Smallest distance between boilers or uptakes and bunkers or woodwork *13"* Mean dia. of boilers *13.9"* Length *10.6"* Material of shell plates *steel*

Thickness *1/8"* Range of tensile strength *28-32* Are the shell plates welded or flanged *no* Descrip. of riveting: cir. seams *D. Lap* long. seams *B. straps* Diameter of rivet holes in long. seams *1 3/16"* Pitch of rivets *8 3/8"* Lap of plates or width of butt straps *18"*

Per centages of strength of longitudinal joint rivets *90.4* Working pressure of shell by rules *181.7* Size of manhole in shell *16" x 12"* plate *65.82*

Size of compensating ring *Flanged* No. and Description of Furnaces in each boiler *3 Brighton's* Material *steel* Outside diameter *3-2 1/2"*

Length of plain part top *1 1/2"* bottom *1 3/8"* Thickness of plates crown *1 1/2"* bottom *1 3/8"* Description of longitudinal joint *Welded* No. of strengthening rings *none*

Working pressure of furnace by the rules *180.5* Combustion chamber plates: Material *steel* Thickness: Sides *3/32"* Back *1/16"* Top *3/32"* Bottom *1/16"*

Pitch of stays to ditto: Sides *10 1/2" x 9 3/8"* Back *10 1/2" x 8"* Top *10 1/2" x 9 3/8"* If stays are fitted with nuts or riveted heads *nuts* Working pressure by rules *183.5*

Material of stays *steel* Area at smallest part *1.99 sq in* Area supported by each stay *116.9* Working pressure by rules *183.5* End plates in steam space: *183.5* *2.14*

Material *steel* Thickness *1 1/16"* Pitch of stays *24" x 17 1/2"* How are stays secured *to nuts* Working pressure by rules *181 psi* Material of stays *steel*

Area at smallest part *7.07 sq in* Area supported by each stay *426 sq in* Working pressure by rules *185* Material of Front plates at bottom *steel*

Thickness *1 5/16"* Material of Lower back plate *steel* Thickness *3/32"* Greatest pitch of stays *4 1/2" x 10 3/8"* Working pressure of plate by rules *180*

Diameter of tubes *3 1/2"* Pitch of tubes *4 1/2"* Material of tube plates *steel* Thickness: Front *15/16"* Back *1/16"* Mean pitch of stays *9 1/4"*

Pitch across wide water spaces *14 1/2" x 9"* Working pressures by rules *182* Girders to Chamber tops: Material *steel* Depth and thickness of girder at centre *8 1/2" x 1 1/2"* Length as per rule *2-7"* Distance apart *10 1/2"* Number and pitch of stays in each *2-9 3/8"*

Working pressure by rules *182.5* Steam dome: description of joint to shell *none* % of strength of joint *no*

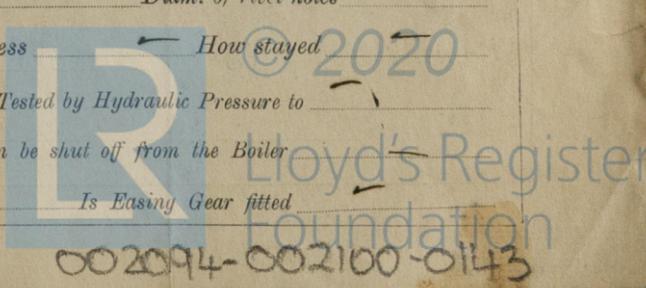
Diameter *no* Thickness of shell plates *no* Material *no* Description of longitudinal joint *no* Diam. of rivet holes *no*

Pitch of rivets *no* Working pressure of shell by rules *no* Crown plates *no* Thickness *no* How stayed *no*

SUPERHEATER. Type *none* Date of Approval of Plan *no* Tested by Hydraulic Pressure to *no*

Date of Test *no* Is a Safety Valve fitted to each Section of the Superheater which can be shut off from the Boiler *no*

Diameter of Safety Valve *no* Pressure to which each is adjusted *no* Is Easing Gear fitted *no*



002094-002100-0143

IS A DONKEY BOILER FITTED? *no*

If so, is a report now forwarded? *-*

SPARE GEAR. State the articles supplied:—*2 top end, 2 bottom end, 2 main bearings, and 6 coupling bolts & nuts, one feed & one bilge pump valve & seat, 2 set of check valves, 1/2 lb of iron plate, 1/2 lb of iron bars, 100 bolts & nuts assorted, 3 boiler tubes, 3 condenser tubes, 6 cylinder cover, and 4 valve chest studs, 6 piston bolts & nuts, and other minor articles*

The foregoing is a correct description,
THE NORTH EASTERN MARINE ENGINEERING CO., LTD.

G. J. Harrison
Secretary

Manufacturer.

Dates of Survey while building { During progress of work in shops -- } *1922 Aug 10-15-22 Sept 1-5-11-18-25-26-27-29 Oct 5-11-18-16-19-22 Nov 5-*
{ During erection on board vessel --- } *1922 Nov 4-21-23-27-30-1923 Jan 4th*
Total No. of visits *26*

Is the approved plan of main boiler forwarded herewith *Yes*
" " " donkey " " " *None*

Dates of Examination of principal parts—Cylinders *25-9-22* Slides *5-9-22* Covers *5-10-22* Pistons *5-9-22* Rods *27-9-22*
Connecting rods *11-9-22* Crank shaft *26-9-22* Thrust shaft *18-9-22* Tunnel shafts *18-10-22* Screw shaft *16-10-22* Propeller *16-10-22*
Stern tube *5-9-22* Steam pipes tested *23-11-22* Engine and boiler seatings *21-11-22* Engines holding down bolts *27-11-22*
Completion of pumping arrangements *27-11-22* Boilers fixed *23-11-22* Engines tried under steam *30-11-22*
Completion of fitting sea connections *3-11-22* Stern tube *3-11-22* Screw shaft and propeller *21-11-22*
Main boiler safety valves adjusted *30-11-22* Thickness of adjusting washers *P=7/16 S=15/32 P=13/16 S=15/32*
Material of Crank shaft *steel* Identification Mark on Do. *18-26-9-22* Material of Thrust shaft *steel* Identification Mark on Do. *18-18-9-22*
Material of Tunnel shafts *steel* Identification Marks on Do. *18-18-10-22* Material of Screw shafts *Iron* Identification Marks on Do. *18-16-10-22*
Material of Steam Pipes *solid drawn copper* Test pressure *360 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. *This vessels machinery has been examined during construction, and the materials and workmanship are good and in accordance with the requirements of the rules, and the approved plans. On completion it was submitted to a steam trial with satisfactory results during which the safety valves were adjusted to the working pressure.*

It is therefore eligible in my opinion to be classed with the notation of +L.M.C. 1.23 in the R. Book.

**It is submitted that
this vessel is eligible for
THE RECORD. + L.M.C. 1.23. C.L.**

A.H.D. 8/1/23

Maurice Pitson

Engineer Surveyor to Lloyd's Register of Shipping.

The amount of Entry Fee ... £ *4 : 0* } When applied for.
Special ... £ *52 : 0* } *18/1/23*
Donkey Boiler Fee ... £ : : }
Travelling Expenses (if any) £ : : } *20/1/23*

Committee's Minute *FRI. JAN. 12 1923*
Assigned *+ L.M.C. 1.23*

CERTIFICATE WRITTEN



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Newcastle

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