

REPORT ON MACHINERY.

Received at London Office

Date of writing Report 19 22.9.19 When handed in at Local Office 22.9.19 Port of SUNDERLAND

No. in Survey held at Sunderland Date, First Survey 7 Mar 19 Last Survey 22.9.19
 Reg. Book. Steel 5/3 "DAGENHAM" on the 5/3 "DAGENHAM" (Number of Visits 24) Gross 2178
 Master Brown Built at Sunderland By whom built Mr. W. M. Graham & Co. (252) Total Net 1260 When built 1919
 Engines made at Sunderland By whom made Mr. Macdonald & Partners (307) when made 1919
 Boilers made at Sunderland By whom made Mr. Macdonald & Partners (307) when made 1919
 Registered Horse Power Owners John Hudson & Co. Ltd. Port belonging to London
 Nom. Horse Power as per Section 28 231 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

ENGINES, &c.—Description of Engines Twin No. of Cylinders 3 No. of Cranks 3
 Dia. of Cylinders 21.35.58 Length of Stroke 39 Revs. per minute 77 Dia. of Screw shaft 12.05 Material of screw shaft 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 in 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 liners are fitted, is the shaft lapped or protected between the liners Yes Length of stern bush 4-1
 Dia. of Tunnel shaft 10.57 as per rule 10.55 Dia. of Crank shaft journals 11.10 as per rule 11.07 Dia. of Crank pin 11.3 Size of Crank webs 16.2.7.6 Dia. of thrust shaft under collars 11.3 Dia. of screw 15-0 Pitch of Screw 16-0 No. of Blades 4 State whether moveable No Total surface 75.5
 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 2 Sizes of Pumps 6.5 x 8.5 x 8, 6 x 4 x 6 No. and size of Suctions connected to both Bilge and Donkey pumps 2 in hold, 2 in hold, 2 in hold
 In Engine Room 3, 3" In Holds, &c. 2 1/2 in hold, 2 in hold, 2 in hold
 No. of Bilge Injections 1 sizes 5.5 Connected to condenser on to circulating pump Yes Is a separate Donkey Suction fitted in Engine room & size 4.5 3.5
 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
 What pipes are carried through the bunkers None How are they protected None
 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 S) Manufacturers of Steel Spinners & Sons
 Total Heating Surface of Boilers 3616.0 Is Forced Draft fitted No No. and Description of Boilers Two single end
 Working Pressure 185 lbs Tested by hydraulic pressure to 360 lbs Date of test 9.8.19, 18.8.19 No. of Certificate 3596, 3598
 Can each boiler be worked separately Yes Area of fire grate in each boiler 59.0 No. and Description of Safety Valves to each boiler 2 Spring Valves Area of each valve 5.93.0" Pressure to which they are adjusted 185 lbs Are they fitted with easing gear Yes
 Smallest distance between boilers or uptakes and bunkers or woodwork 16" Mean dia. of boilers 14-5 Length 10-6 Material of shell plates S
 Thickness 1.5 Range of tensile strength 29.5 x 33.5 Are the shell plates welded or flanged No Descrip. of riveting: cir. seams Lap joint
 long. seams L. L. W. W. Diameter of rivet holes in long. seams 1.76 Pitch of rivets 8.5 Lap of plates or width of butt straps 17.5
 Per centages of strength of longitudinal joint rivets 88.7 Working pressure of shell by rules 184 Size of manhole in shell 12 x 16
 Size of compensating ring 7.5 x 1.5 No. and Description of Furnaces in each boiler 3 Plain Material S Outside diameter 3-8"
 Length of plain part top 5-9 Thickness of plates crown 3.5 Description of longitudinal joint Weld No. of strengthening rings None
 Working pressure of furnace by the rules 185 Combustion chamber plates: Material S Thickness: Sides 1/8 Back 1/8 Top 1/8 Bottom 1/8
 Pitch of stays to ditto: Sides 8.5 x 8.5 Back 11 x 8.5 Top 10.5 x 8.5 If stays are fitted with nuts or riveted heads None Working pressure by rules 182
 Material of stays S Area at smallest part 2.03.0" Area supported by each stay 95.0" Working pressure by rules 192 End plates in steam space: Material S Thickness 1.5 Pitch of stays 15 x 23 How are stays secured d. n. + l. Working pressure by rules 185 Material of stays S
 Area at smallest part 6.1.0" Area supported by each stay 345.0" Working pressure by rules 183 Material of Front plates at bottom S
 Thickness 1" Material of Lower back plate S Thickness 3/32 Greatest pitch of stays 13.5 Working pressure of plate by rules 185
 Diameter of tubes 3.5 Pitch of tubes 4.5 x 4.5 Material of tube plates S Thickness: Front 1" Back 3/32 Mean pitch of stays 14.5 x 9
 Pitch across wide water spaces 14.5 Working pressures by rules 182 Girders to Chamber tops: Material S Depth and thickness of girder at centre 7.5 x 2" Length as per rule 28" Distance apart 10.5 Number and pitch of stays in each 2, 8.5
 Working pressure by rules 187 Steam dome: description of joint to shell None % of strength of joint None
 Diameter None Thickness of shell plates None Material None Description of longitudinal joint None Diam. of rivet holes None
 Pitch of rivets None Working pressure of shell by rules None Crown plates None Thickness None How stayed None

SUPERHEATER. Type None Date of Approval of Plan None Tested by Hydraulic Pressure to None
 Date of Test None Is a Safety Valve fitted to each Section of the Superheater which can be shut off from the Boiler None
 Diameter of Safety Valve None Pressure to which each is adjusted None Is Easing Gear fitted None

IS A DONKEY BOILER FITTED? *NO*

If so, is a report now forwarded?

SPARE GEAR. State the articles supplied:— *Two top end, two bottom end connecting rod bolts and nuts, two main bearing bolts, one set coupling bolts, one set fuel and tail pump valves assembly bolts and nuts, 200 of various sizes.*

The foregoing is a correct description,

MACCOLL & POLLOCK, LTD.

G. R. Pollock

Manufacturer.

Dates of Survey while building	During progress of work in shops ---	1919 Mar 7.18 Apr 4.25 May 5.14.22 Jun 6.20.30 Jul 15.18.24 Aug 19.11.13.18.22.29 Sep 3.10	
		During erection on board vessel ---	15.22
			Total No. of visits

Is the approved plan of main boiler forwarded herewith *410*

Dates of Examination of principal parts—Cylinders *22.5.19* Slides *14.5.19* Covers *22.5.19* Pistons *20.6.19* Rods *20.6.19*
 Connecting rods *20.6.19* Crank shaft *14.5.19* Thrust shaft *20.6.19* Tunnel shafts *13.8.19* Screw shaft *18.7.19* Propeller *14.5.19*
 Stern tube *30.6.19* Steam pipes tested *10.4.19, 29.8.19* Engine and boiler seatings *11.8.19* Engines holding down bolts *3.9.19*
 Completion of pumping arrangements *22.8.19* Boilers fixed *3.9.19* Engines tried under steam *10.9.19*
 Completion of fitting sea connections *11.8.19* Stern tube *22.8.19* Screw shaft and propeller *22.8.19*
 Main boiler safety valves adjusted *10.9.19* Thickness of adjusting washers *1 1/2" 1 3/4" 1 5/8" 1 3/4" 1 5/8"*
 Material of Crank shaft *Steel* Identification Mark on Do. *4893JAW* Material of Thrust shaft *Steel* Identification Mark on Do. *307GAH*
 Material of Tunnel shafts *Steel* Identification Marks on Do. *307GAH* Material of Screw shafts *Steel* Identification Marks on Do. *307GAH*
 Material of Steam Pipes *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 *410* If so, state name of vessel *SS 'Hornchurch'*

General Remarks (State quality of workmanship, opinions as to class, &c.)

The machinery of this vessel has been built under special survey. The materials and workmanship are sound and good and under the vessel ship in my opinion to have merit of + L.M.C. 9.19.

It is submitted that this vessel is eligible for THE RECORD + L.M.C. 9.19.

The amount of Entry Fee ... £	:	:	When applied for,
Special ... £ <i>48</i>	:	:	<i>23 SEP 1919</i>
Donkey Boiler Fee ... £	:	:	When received,
Travelling Expenses (if any) £	:	:	<i>4/10/19</i>

G. R. Pollock
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute *FRI SEP 20 1919*
Assigned *+ L.M.C. 9.19*



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SUNDERLAND

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

MACHINERY CERTIFICATE
No. 1114