

## REPORT ON STEAM RECIPROCATING ENGINE MACHINERY.

Received at London Office 5 AUG 1924

Date of writing Report 5 AUG 1924 When handed in at Local Office 5 AUG 1924 Port of London (Faversham)  
 No. in Survey held at Great Yarmouth. Date, First Survey 25 FEBRUARY Last Survey 29 July 1924  
 Reg. Book. on the Steel Tug "Cairnrock" (Number of Visits 13)  
 Built at Leek (Holland) By whom built T. Van Duyvendyk's Scheepswerk. Yard No. When built 1924  
 Engines made at Great Yarmouth By whom made Grattree & Co. Ltd. Engine No. 581 when made 1924  
 Boilers made at Stockton By whom made Blair & Co. Boiler No. A.50 when made 1924.  
 Registered Horse Power Owners Messrs Harrison (London) Ltd. Port belonging to London.  
 Nom. Horse Power as per Rule 72 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted No

## ENGINES, &amp;c.—Description of Engines Compound surface condensing.

Dia. of Cylinders  $15\frac{1}{2} \times 34$  Length of Stroke 24" Revs. per minute 120 No. of Cylinders 2 No. of Cranks 2  
 Dia. of Crank shaft journals as fitted  $7\frac{1}{8}$ " Dia. of Crank pin  $7\frac{1}{8}$ " Crank webs Mid. length breadth 10" Thickness parallel to axis H.P.  $4\frac{1}{2}$ " L.P.  $5\frac{1}{2}$ "  
 Diameter of Thrust shaft under collars as fitted  $7\frac{1}{8}$ " Diameter of Tunnel shaft as fitted  $6\frac{3}{8}$ " Diameter of Screw shaft as fitted  $7\frac{3}{4}$ " Is the Screw shaft fitted with a continuous liner the whole length of the stern tube Two liners Is the after end of the liner made watertight 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 Bituminous solution Is an approved appliance fitted at the after end of the shaft to permit of it being efficiently lubricated Grease pump fitted, no gland at end of bush Length of Stern Bush 2'10" Diameter of Propeller 8'6"  
 Pitch of Propeller 10 feet No. of Blades 3 State whether Moveable Solid Total Surface  $27\frac{1}{2}$  square feet.  
 No. of Feed Pumps fitted to the Main Engines one Diameter of ditto  $2\frac{1}{2}$ " Stroke 12" Can one be overhauled while the other is at work Yes  
 No. of Bilge Pumps fitted to the Main Engines one Diameter of ditto  $2\frac{1}{2}$ " Stroke 12" Can one be overhauled while the other is at work Yes  
 Total number and size of power driven Feed and Bilge Auxiliary Pumps One Duplex  $5\frac{1}{4} \times 3\frac{1}{2} \times 5$   
 No. and size of Pumps connected to the Main Bilge Line Two  
 No. and size of Ballast Pumps No. and size of Lubricating Oil Pumps, including Spare Pump  
 Are two independent means arranged for circulating water through the Oil Cooler Yes No. and size of suction connected to both Main Bilge Pumps and Auxiliary Bilge Pumps:—In Engine and Boiler Room Three 2" dia and in Holds, &c. One 2" in hold space, one 2" dia in fore & after hold respectively.

No. and size of Main Water Circulating Pump Bilge Suctions One 4" dia No. and size of Donkey Pump Direct Suctions to the Engine Room Bilges One 2" dia Are all the Bilge Suction Pipes in holds and tunnel well fitted with strum-boxes Yes  
 Are the Bilge Suctions in the Machinery Space led from easily accessible mud-boxes, placed above the level of the working floor, with straight tail pipes to the bilges 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  
 Are all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times Yes  
 Is the arrangement of Valves and their connections such as to prevent the possibility of water passing from the sea or from water tanks into the cargo or machinery spaces, or from one compartment to another Yes Is the Screw Shaft Tunnel watertight Yes Is it fitted with a watertight door worked from Yes

MAIN BOILERS, &c.—(Letter for record S.) Total Heating Surface of Boilers 1393 $\frac{1}{2}$   
 Forced Draft fitted No No. and Description of Boilers One single ended Working Pressure 140 lbs.

IS A REPORT ON MAIN BOILERS NOW FORWARDED? Yes  
 IS A DONKEY BOILER FITTED? No If so, is a report now forwarded?

PLANS. Are approved plans forwarded herewith for Shafting Yes Main Boilers Yes Auxiliary Boilers Donkey Boilers  
 General Pumping Arrangements Oil fuel Burning Piping Arrangements

## SPARE GEAR. State the articles supplied:—

Two main bearing bolts & nuts.  
 Two top end bolts & nuts.  
 Two bottom end bolts & nuts.  
 One set coupling bolts & nuts.  
 One set feed pump valves.  
 One set bilge pump valves.  
 One spare main & one donkey check valve.  
 One spare set on pump valves.  
 Three condenser tubes & six gaskets.  
 Bolts, nuts from various sizes.

The foregoing is a correct description

GRANTREE &amp; CO. LTD.

J. A. Chamberlain

Manufacturer.



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During progress of work in shops - - { 1924 FEB 25 APR 10 16 May 8 30  
Dates of Survey while building { During erection on board vessel - - { 1924 JUNE 17 22 25 JULY 8 8 23 25 29  
Total No. of visits 13

Dates of Examination of principal parts - Cylinders 16.4.24, 16.4.24, 8.5.24, 30.5.24 Slides 30.5.24  
Covers 30.5.24 Pistons 16.4.24 8.5.24 Rods 16.4.24, 8.5.24  
Connecting rods 16.4.24, 8.5.24 Crank shaft ✓ Thrust shaft 16.4.24, 8.5.24  
Tunnel shafts 16.4.24, 8.5.24 Screw shaft 16.4.24, 8.5.24 Propeller 30.5.24  
Stern tube 30.5.24 Engine and boiler seatings 25.6.24 Engines holding down bolts 18.7.24  
Completion of pumping arrangements 18.7.24 Boilers fixed 25.6.24 8.7.24 Engines tried under steam 25.7.24  
Completion of fitting sea connections 17.6.24 Stern tube 17.6.24 Screw shaft and propeller 17.6.24  
Main boiler safety valves adjusted 25.7.24 Thickness of adjusting washers P. 3/8" S. 3/8"  
Material of Crank shaft Steel Identification Mark on Do. N° 812. A.T.T. 11.3.24.  
Material of Thrust shaft Steel Identification Mark on Do. N° 2265 A.T.T. 8.5.24.  
Material of Tunnel shafts Steel Identification Marks on Do. N° 2252 A.T.T. 8.5.24.  
Material of Screw shafts Steel Identification Marks on Do. N° 2251 A.T.T. 8.5.24.  
Material of Steam Pipes Copper Test pressure 280 lb. Ca. 11. 27/8/24 209 Made at Hull + tested by L.R. Surveyors at that port.  
Is an installation fitted for burning oil fuel ✓ Is the flash point of the oil to be used over 150°F. ✓  
Have the requirements of the Rules for carrying and burning oil fuel 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 of this vessel have been constructed under special survey, the materials and workmanship are of good quality, + together with the boiler satisfactorily tried under steam, + in my opinion eligible to be classed in the Register Book + L.M.C. 7.24.

It is submitted that this vessel is eligible for the RECORD + L.M.C. 7.24.

Subject to the removal of the existing donkey pump discharge pipe connections to the fore + the after peaks.

25/8/24  
A.T.T.

The amount of Entry Fees £ 2 : : When applied for, 5.8.24  
Special ... £ 12-0-0  
Donkey Boiler Fee ... £ 6-3-9  
Travelling Expenses (if any) £ 6-3-9  
When received, 7.8.24

Committee's Minute FRI 29 AUG 1924

Assigned

A.B. Farmer

Engineer Surveyor to Lloyd's Register of Shipping.

FRI. 12 SEP 1924



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