

REPORT ON STEAM RECIPROCATING ENGINE MACHINERY.

Received at London Office JAN 22 1941

Date of writing Report 19 When handed in at Local Office 14/11/40 Port of NEWCASTLE-ON-TYNE
 No. in Survey held at South Shields Date, First Survey 15 March Last Survey Dec 31 1940
 Reg. Book. 87995 on the S.S. EMPIRE RAIN (Number of Visits 131)
 Built at S. Shields By whom built J. Readhead, South Shields Yard No. 520 When built 1940
 Engines made at South Shields By whom made J. Readhead, South Shields Engine No. 520 When made 1940
 Boilers made at South Shields By whom made J. Readhead, South Shields Boiler No. 520 When made 1940
 Registered Horse Power _____ Owners Ministry of Shipping Port belonging to S. Shields
 Nom. Horse Power as per Rule 435 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes
 Trade for which Vessel is intended General cargo

ENGINES, &c.—Description of Engines Triple Expansion Revs. per minute 62
 Dia. of Cylinders 25 x 42 x 71 Length of Stroke 48 No. of Cylinders 3 No. of Cranks 3
 Crank shaft, dia. of journals 14.115 as per Rule 14.115 Crank pin dia. 14.1/4 Crank webs Mid. length breadth 8.1/2 Thickness parallel to axis 9.1/4
 as fitted 14.1/4 Mid. length thickness 9.1/4 shrunk Thickness around eye-hole 6.1/4
 Intermediate Shafts, diameter 13.1/2 as per Rule 13.1/2 Thrust shaft, diameter at collars 14.175 as per Rule 14.175
 as fitted 13.1/2 as fitted 14.1/4
 Tube Shafts, diameter 15.04 as per Rule 15.04 Is the tee shaft fitted with a continuous liner Yes
 as fitted _____ as fitted 15.1/4 as fitted _____
 Bronze Liners, thickness in way of bushes .765 as per Rule .765 Thickness between bushes _____ Is the after end of the liner made watertight in the
 as fitted 13.1/16 as fitted _____
 propeller boss Yes If the liner is in more than one length are the junctions made by fusion through the whole thickness of the liner 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 Is an approved Oil Gland or other appliance fitted at the after end of the tube
 shaft Yes If so, state type _____ Length of Bearing in Stern Bush next to and supporting propeller 5-1/4
 Propeller, dia. 18-3 Pitch 17-9 No. of Blades 4 Material C.I. whether Moveable No Total Developed Surface 110 sq. feet
 Feed Pumps worked from the Main Engines, No. 2 Diameter 4.5/8 Stroke 24 Can one be overhauled while the other is at work Yes
 Bilge Pumps worked from the Main Engines, No. 2 Diameter 4.1/2 Stroke 24 Can one be overhauled while the other is at work Yes
 Feed Pumps { No. and size (2) 9 x 12 x 24 (1) 9 x 12 x 24 Pumps connected to the { No. and size (1) 9.1/2 x 12 x 18 (1) 8 x 11 x 18
 How driven Steam Main Bilge Line How driven Steam
 Ballast Pumps, No. and size (1) 9.1/2 x 12 x 18 (1) 8 x 11 x 18 Lubricating Oil Pumps, including Spare Pump, No. and size Yes
 Are two independent means arranged for circulating water through the Oil Cooler Yes Suctions, connected to both Main Bilge Pumps and Auxiliary
 Bilge Pumps;—In Engine and Boiler Room 3-3 dia
 In Pump Room Yes In Holds, &c. N.1 hold 2-3 dia N.2 hold 2-3/2 dia N.3 hold 2-2 1/2 dia N.4 dry tank 2-2 1/2 dia N.4 hold 2-3 dia N.5 hold 2-3 dia Tunnel well 1-2 1/2 dia
 Main Water Circulating Pump Direct Bilge Suctions, No. and size One 9 dia Independent Power Pump Direct Suctions to the Engine Room Bilges,
 No. and size One 5 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 Sea Connections fitted direct on the skin of the ship Yes Are they fitted with 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 Overboard Discharges above or below the deep water line Below
 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 pass through the bunkers Bilge - side ports How are they protected Wood casing
 What pipes pass through the deep tanks _____ Have they been tested as per Rule Yes
 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 Shaft Tunnel watertight Yes Is it fitted with a watertight door No worked from _____

MAIN BOILERS, &c.—(Letter for record S) Total Heating Surface of Boilers 5486 sq
 Is Forced Draft fitted Yes No. and Description of Boilers 2 S.E.M. Working Pressure 220 lbs
 IS A REPORT ON MAIN BOILERS NOW FORWARDED? Yes
 IS A DONKEY BOILER FITTED? No If so, is a report now forwarded? Yes
 Is the donkey boiler intended to be used for domestic purposes only _____
 PLANS. Are approved plans forwarded herewith for Shafting 8-4-40 Main Boilers 21-10-29 Auxiliary Boilers Yes Donkey Boilers Yes
 (If not state date of approval)
 Superheaters Yes General Pumping Arrangements 24-9-40 Oil fuel Burning Piping Arrangements Yes

SPARE GEAR.

Has the spare gear required by the Rules been supplied Yes
 State the principal additional spare gear supplied
Additional spare gear (Managers) 50 Brass ferrules for condenser tubes & 100 packings, 3 Taper gauge glasses, 4 Taper packing washers for gauge glasses, 12 Piston studs, 1 Set piston rings for M.P. & L.P. pistons, 10 condenser tubes, 12 Plain tubes for boilers, 6 complete sets of furnace front baffle plates, 9 Back bridge plates, 100 Screws for boilers, Wood patterns for baffle plates, bridge plates & firebricks.

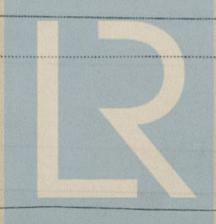
FOR JOHN READHEAD & SONS LTD.

The foregoing is a correct description,

C. H. Power

MANAGING DIRECTOR.

Manufacturer.



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NOTE - T. 1m. 3.32.

1940
 During progress of work in shops - - Mar. 15, 28. Apr. 4, 9, 18, 19, 22, 23, 24, 25, 26, 27, 29. May 6, 17, 23, 29. June 4, 6, 7, 10, 11, 13, 18, 19, 20, 24, 25, 26, 27, 28. July 1, 3, 4, 5, 8, 9, 12, 15, 16, 17, 18, 19, 23, 24, 25, 26, 29, 30, 31. Aug. 1, 2, 6, 7, 9, 13, 14, 15, 16, 20, 22, 23, 26, 27, 28, 30. Sep. 2, 4, 5, 6, 10, 16, 18, 19, 20, 23, 24, 25, 26, 27, 30. Oct. 1, 2, 3, 4, 7, 10, 11, 14, 15, 16, 17, 18, 22, 23, 24, 25, 28, 29, 30, 31. Nov. 1, 4, 12, 13, 14, 15, 18, 20, 25, 28, 29, 30. Dec. 2, 3, 4, 5, 6, 9, 10, 12, 13, 18, 19, 23, 26, 30, 31.
 Total No. of visits 131.

Dates of Examination of principal parts—Cylinders 14-11-40 Slides 14-11-40 Covers 19-11-40
 Pistons 19-11-40 Piston Rods 12-11-40 Connecting rods 12-11-40
 Crank shaft 30-9-40 Thrust shaft 7-12-40 Intermediate shafts 7-12-40
 Tube shaft ✓ Screw shaft 30-10-40 Propeller 30-10-40
 Stern tube 23-10-40 Engine and boiler seatings 12-11-40 Engines holding down bolts 5-12-40
 Completion of fitting sea connections 29-10-40
 Completion of pumping arrangements 31-12-40 Boilers fixed 6-12-40 Engines tried under steam 7-12-40 30-12-40
 Main boiler safety valves adjusted 30-12-40 Thickness of adjusting washers P 5-3/8 P 5-3/8 P 5-1/4 P 5-1/4 31-12-40
 Crank shaft material S.M. Steel Identification Mark 375 Thrust shaft material S.M. Steel Identification Mark 4998
 Intermediate shafts, material S.M. Steel Identification Marks 4992 4995 4993 4996 4994 4997 Tube shaft, material ✓ Identification Mark ✓
 Screw shaft, material S.M. Steel Identification Mark 4991 Steam Pipes, material S.S. Steel Test pressure 660 lbs Date of Test 12-11-40 2-12-40 3-12-40
 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 the Rules for the use of oil as fuel been complied with ✓
 Is the vessel (not being an oil tanker) fitted for carrying oil as cargo ✓ If so, have the requirements of the Rules been complied with ✓
 If the notation for Ice Strengthening is desired, state whether the requirements in this respect have 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 machinery of this vessel has been constructed under special survey in accordance with rule requirements & approved plans. Materials & workmanship are good. The machinery was satisfactorily tested on moving trials & in my opinion is eligible for classification with records of + L.M.C. 12, 40, F.D. C.L.

The amount of Entry Fee ... £ 5 : 0 : 0 When applied for,
 Special ... £ 112 : 16 : 3 120 JAN 1941
 Donkey Boiler Fee ... £ ✓ : ✓ : ✓ When received,
 Travelling Expenses (if any) £ ✓ : ✓ : ✓ 19

J. H. Matthews
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute TUE. 28 JAN 1941

Assigned Lamb 1, 41
 J.D. C.



Certificate to be sent to Newcastle-on-Tyne

The Surveyors are requested not to write on or below the space for Committee's Minute.