

REPORT ON STEAM RECIPROCATING ENGINE MACHINERY.

Received at London Office 1 - MAR 1945

Date of writing Report 19... When handed in at Local Office 22.2.45 Port of NEWCASTLE-ON-TYNE
 No. in Survey held at South Shields Date, First Survey (1944) Feb. 28 Last Survey July 16th 1945
 Reg. Book 39435 on the S.S. EMPIRE RABAU Tons (Gross 7200.00 (Net 5104.81)
 Built at S. Shields By whom built J. Readhead & Sons Ltd Yard No. 543 When built 1945
 Engines made at South Shields By whom made J. Readhead & Sons Ltd Engine No. 543 When made 1945
 Boilers made at Barrow-in-Furness By whom made Vickers-Armstrongs Ltd Boiler No. 850 When made 1945
 Registered Horse Power Owners Ministry of War Transport Port belonging to S. Shields
 Nom. Horse Power as per Rule 510 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 76
 Dia. of Cylinders 24 1/2 x 37 x 70 Length of Stroke 40 No. of Cylinders 3 No. of Cranks 3
 Crank shaft, dia. of journals as per Rule 14 Crank pin dia. 14 1/4 Crank webs Mid. length breadth 2-4 1/2 Thickness parallel to axis 9-9 1/2
 as fitted 14 1/4 Mid. length thickness 9-9 1/2 shrunk Thickness around eye-hole 7 1/2-7 5/8
 Intermediate Shafts, diameter as per Rule 13.33 Thrust shaft, diameter at collars as per Rule 14
 as fitted 13 5/8 as fitted 14 1/4
 Tube Shafts, diameter as per Rule 14.05 Is the {tube screw} shaft fitted with a continuous liner { Yes
 as fitted 15 1/4
 Bronze Liners, thickness in way of bushes as per Rule .765 Is the after end of the liner made watertight in the
 as fitted .812 Thickness between bushes as fitted 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 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
 at Yes If so, state type Yes Length of Bearing in Stern Bush next to and supporting propeller 5'-1"
 Propeller, dia. 18'-3" Pitch 15.40 No. of Blades 4 Material C.I. whether Moveable No Total Developed Surface 90.5 sq. feet
 Feed Pumps worked from the Main Engines, No. None Diameter Stroke 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 26 Can one be overhauled while the other is at work Yes
 Feed Pumps No. and size (2) 7 x 9 1/2 x 21, (1) 7 x 9 1/2 x 21 Pumps connected to the Main Bilge Line No. and size (1) 10 1/2 x 13 x 24, (1) 7 x 9 1/2 x 21
 How driven Steam How driven Steam
 Ballast Pumps, No. and size (1) 10 1/2 x 13 x 24, (1) 7 x 9 1/2 x 21 Lubricating Oil Pumps, including Spare Pump, No. and size
 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 In Holds, &c. N^o 1 hold 2-3 dia. N^o 2 hold 2-3 dia. N^o 3 hold 2-3 dia.
 N^o 5 hold 2-3 dia. N^o 6 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 2 inside H.O.T. Yes Are they fitted with Valves or Cocks Yes
 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 How are they protected Wood casings
 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, access by means of pump upped deck

MAIN BOILERS, &c.—(Letter for record S) Total Heating Surface of Boilers 7240 sq. ft.
 Which Boilers are fitted with Forced Draft 3 Main Which Boilers are fitted with Superheaters 3 Main
 No. and Description of Boilers 3 Main S.E.M. Working Pressure 220 lbs. a

IS A REPORT ON MAIN BOILERS NOW FORWARDED? Yes
 IS A DONKEY BOILER FITTED? Yes If so, is a report now forwarded? Yes
 Can the donkey boiler be used for domestic purposes only Yes

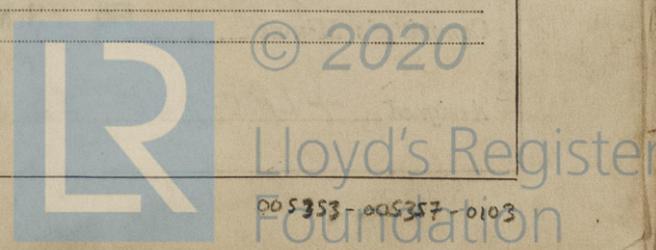
PLANS. Are approved plans forwarded herewith for Shafting 20-10-43 Main Boilers 11-9-41 Auxiliary Boilers Donkey Boilers
 (If not state date of approval)

Superheaters 3 Main S.E.M. General Pumping Arrangements 21-9-44 Oil fuel Burning Piping Arrangements

SPARE GEAR.
 Has the spare gear required by the Rules been supplied Yes
 State the principal additional spare gear supplied In accordance with specification

The foregoing is a correct description.

H.M. Coatsworth
 Director.



During progress of work in shops -- (1944) Feb. 28, Mar. 3, 6, 10, 15, 16, 17, 24, 29, 31 Apr. 6, 11, 12, 13, 14, 17, 18, 19, 27, 28 May 2, 4, 11, 12, 16, 25, 31 June 5
 13, 14, 16, 20, 22, 28, 29 July 4, 6, 31 Aug 8, 14, 21, 22, 23, 24, 28, 31 Sept. 1, 6, 11, 13, 15, 20, 21, 25, 26 Oct. 4, 5, 6, 10, 13, 16
 20, 23, 25, 28, 30 Nov. 1, 2, 6, 7, 8, 9, 10, 13, 14, 16, 17, 20, 21, 22, 23, 27, 29, 30 Dec. 2, 4, 5, 7, 8, 11, 12, 13, 14, 15, 18, 19, 22
 22, 27, 28, 29 (1945) Jan. 3, 5, 8, 9, 12, 16, 17, 18, 22, 23, 25, 30 Feb. 6, 8, 9, 16

Dates of Survey while building During erection on board vessel ---
 Total No. of visits 119

Dates of Examination of principal parts—Cylinders 30-11-44 Slides A-12-44 Covers 30-11-44
 Pistons 4-12-44 Piston Rods 2-12-44 Connecting rods 2-12-44
 Crank shaft 16-10-44 Thrust shaft 20-12-44 Intermediate shafts 20-12-44
 Tube shaft ✓ Screw shaft 23-11-44 Propeller 23-11-44
 Stern tube 21-11-44 Engine and boiler seatings 22-12-44 Engines holding down bolts 22-1-45

Completion of fitting sea connections 27-11-44
 Completion of pumping arrangements 29-1-45 Boilers fixed 22-12-44 Engines tried under steam 29, 29-12-44
 Main boiler safety valves adjusted 29-12-44 Thickness of adjusting washers P/P-3/8 C/P-1/2 S/P-3/8

Crank shaft material S.M. Steel Identification Mark 8605 Thrust shaft material S.M. Steel Identification Mark 8827
 Intermediate shafts, material S.M. Steel Identification Marks 8828 8831 8829 8832 8830 8833 Tube shaft, material ✓ Identification Mark 23-10-44

Screw shaft, material S.M. Steel Identification Mark 8834 Steam Pipes, material S.D. Steel Test pressure 660 lb Date of Test 15-10-19-12-44
 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. Yes ✓ If so, state name of vessel TYPE P.F.(C)

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 & river trials & in my opinion is eligible for classification with records of +L.M.C. 2, 45 F.D.C.L. 3 S.B. (S.P.F.).

NEWCASTLE-ON-TYNE
 Certificate to be sent to

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

The amount of Entry Fee	£ 6 : 0 :	When applied for, 19 FEB 1945
Special	£ 75 - 7 - 6	
Donkey Boiler Fee	£ ✓ :	When received, 19
Travelling Expenses (if any)	£ ✓ :	

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

Committee's Minute FRI. 23 MAR 1945
 Assigned + LMC 245 F.D.C.L. S.P.F.