

REPORT ON STEAM RECIPROCATING ENGINE MACHINERY.

Received at London Office 17 MAR 1943

Date of writing Report 12.2.1944 When handed in at Local Office 12 MAR 1943 Port of THORNE

No. in Survey held at THORNE Date, First Survey 19/12/41 Last Survey 4/3/1943
 Reg. Book (Number of Visits 29) Tons Gross 138
 on the Stal Singh Sena EMPIRE ANDREW A/MS 402 Net NIL

Built at Thorne By whom built R DUNSTON Yard No. T 386 When built 1944

Engines made at WIGAN By whom made WORSLEY MESNES IRONWORKS Engine No. M 4 When made 1943

Boilers made at Stockton-on-Tees By whom made Stockton C. Eng'g & Ship Bldg Boiler No. 6619 When made 1943

Registered Horse Power 85 Owners Ministry of War Transport Port belonging to Thorne

Nom. Horse Power as per Rule 85 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted YES

Trade for which vessel is intended Towing Purposes

ENGINES, &c.—Description of Engines TRIPLE EXPANSION Revs. per minute 140

Dia. of Cylinders 12" x 20" x 32" Length of Stroke 22" No. of Cylinders 3 No. of Cranks 3

Crank shaft, dia. of journals as per Rule 6.4 as fitted 6.5 Crank pin dia. 6.5 Mid. length breadth 9.6 Thickness parallel to axis 4.125
 as fitted 6.5 Crank webs Mid. length thickness 4.125 shrunk Thickness around eye-hole 2.8

Intermediate Shafts, diameter as per Rule 6.12" as fitted 6.25 Thrust shaft, diameter at collars as per Rule 6.4" as fitted 6.5"

Tube Shafts, diameter as per Rule 4.08 as fitted 4.125 Is the tubo shaft fitted with a continuous liner NO
 as fitted 4.125 as fitted 4.125 as fitted 4.125

Bronze Liners, thickness in way of bushes as per Rule — as fitted — Thickness between bushes as per Rule — as fitted — Is the after end of the liner made watertight in the propeller boss —
 If the liner is in more than one length are the junctions made by fusion through the whole thickness of the liner —

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 —

If two liners are fitted, is the shaft lapped or protected between the liners — Is an approved Oil Gland or other appliance fitted at the after end of the tube at YES If so, state type NEWARK PATENT TYPE NO 3 Length of Bearing in Stern Bush next to and supporting propeller 29"

Propeller, dia. 8'-0" Pitch 9'-2" No. of Blades 4 Material C.I. whether Moveable NO Total Developed Surface 25.2 sq. feet

Feed Pumps worked from the Main Engines, No. 1 Diameter 2 1/2" Stroke 12" Can one be overhauled while the other is at work —

Bilge Pumps worked from the Main Engines, No. 1 Diameter 2 1/2" Stroke 12" Can one be overhauled while the other is at work —

Feed Pumps No. and size One 6" 4 1/2", 10" Pumps connected to the Main Bilge Line No. and size One 7 1/2", 5", 6"
 How driven Ind. Stm. How driven Ind. Stm.

Ballast Pumps, No. and size One 7 1/2", 5", 6" Lubricating Oil Pumps, including Spare Pump, No. and size none

Are two independent means arranged for circulating water through the Bilge Pumps — Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge Pumps:—In Engine and Boiler Room ER 1-2" BR 1-2" also direct suction - sublow
 In Pump Room — In Holds, &c. FPT 1-2" APT 1-2"

Main Water Circulating Pump Direct Bilge Suctions, No. and size One 3 1/2" Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size One 2 1/2" ER One 2 1/2" BR Are all the Bilge Suction Pipes in holds and tunnel well fitted with strum-boxes —

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, OR ON EW STL BOXES 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 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 pass through the bunkers NONE How are they protected —

What pipes pass through the deep tanks NONE Have they been tested as per Rule —

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 PART OF E. R. Is it fitted with a watertight door — worked from —

MAIN BOILERS, &c.—(Letter for record S) Total Heating Surface of Boilers 1716 sq. ft.

Which Boilers are fitted with Forced Draft NONE Which Boilers are fitted with Superheaters NONE

No. and Description of Boilers 15B Working Pressure 200 lb.

IS A REPORT ON MAIN BOILERS NOW FORWARDED? YES

IS A DONKEY BOILER FITTED? No If so, is a report now forwarded? —

Can the donkey boiler be used for domestic purposes only —

PLANS. Are approved plans forwarded herewith for Shafting 16.7.42 Main Boilers 10.11.41 Auxiliary Boilers — Donkey Boilers —
 (If not state date of approval)

Superheaters — General Pumping Arrangements 17.3.41 Oil fuel Burning Piping Arrangements —

SPARE GEAR.

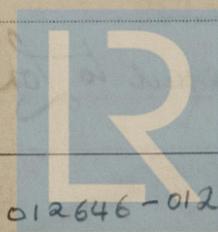
Has the spare gear required by the Rules been supplied AS PER SPECIFICATION.

State the principal additional spare gear supplied DO

The foregoing is a correct description
 FOR WORSLEY MESNES IRONWORKS LTD

J. A. Helling Director

Manufacturer.



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Lloyd's Register Foundation

012646-012655-0208

Dates of Survey while building

During progress of work in shops -- 1941 Dec 19, 1942 Jan 8, June 11, Sept 8, 15, 24, Oct 1, 8, 13, 22, 29, Nov 5, 12, 19, 26, Dec 3, 10, 17, 24, 31.
 1943 Jan 7, 14, 21, 28, Feb 4, 11, 18, 25, Mar 4.

During erection on board vessel --- 1943 Dec 3, 8, 17, 24, 28, 30. 1944 Jan 3, 6, 19, 27, 29, Feb 4, 5, 9, 10, 13, 18, 19, 22, 23. X

Total No. of visits 29 + 20.

Dates of Examination of principal parts—Cylinders 21-1-43 Slides 21-1-43 Covers 21-1-43
 Pistons 4-2-43 Piston Rods 4-2-43 Connecting rods 11-2-43
 Crank shaft 29-10-42 Thrust shaft 8-10-42 Intermediate shafts 28 8-10-42
 Tube shaft --- Screw shaft 8-10-42 Propeller 3/12/43 ---
 Stern tube 3/12/43 --- Engine and boiler seatings 8/12/43 --- Engines holding down bolts --- 30/12/43
 Completion of fitting sea connections 3/12/43
 Completion of pumping arrangements 27-1-44 Boilers fixed 30/12/43 Engines tried under steam 27-1-44
 Main boiler safety valves adjusted 27-1-44 Thickness of adjusting washers P 5
 Crank shaft material OPEN HEARTH STEEL Identification Mark LLOYDS 2347 Thrust shaft material P.H. STEEL Identification Mark LLOYDS 2344
 Intermediate shafts, material P.H. STEEL Identification Marks LLOYDS 2345 Tube shaft, material NONE Identification Mark ---
 Screw shaft, material P.H. STEEL Identification Mark LLOYDS 2346 Steam Pipes, material STL. Test pressure 600 lb Date of Test 13/1/44
 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. NO 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 R. JUNCTIONS T 375/6 + 385 "E. LEWIS"

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

THESE ENGINES HAVE BEEN BUILT UNDER SURVEY
 IN ACCORDANCE WITH THE RULES.
 THE MATERIALS + WORKMANSHIP ARE GOOD.
 THE ABOVE ENGINES ARE NOW COMPLETE + IT IS STATED
 THEY WILL BE IN R. JUNCTION LID INC 386 AT HULL

The machinery of this vessel has been installed under Special Survey in accordance with the Rule requirements, approved plans and Specification. The materials and workmanship are good and machinery found satisfactory in every respect after all tests.

Eligible for record of * LMC 2.44. OG T 3 Cy. 12", 20", 32" - 22" NHP 85.
 158 200 lb 3 cf. H 5 17 16 φ G 5 59 φ

W S Shields, Hull.

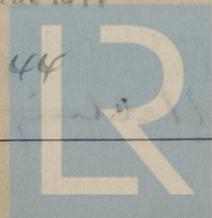
Hull 1/5 LMC fee £4.50
 1st copy Specification Hull 2.00
 " 2nd copy 1.1.3
 " 2nd copy 2.2.6 } Approved Hull 24 FEB 1944

The amount of Entry Fee ... £ 8 : 10 :
 Special SPECIFICATION 2 : 2/6
 Donkey Boiler Fee ... £ : :
 Travelling Expenses (if any) £ 3 : 2/0

H Taylor
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute LIVERPOOL 196 MAR 1943
 Assigned Transmit to London.

FRI. 3 MAR 1944



Date of writing
 No. in Reg. Book.
 Built at
 Engines made
 Boilers made
 Nominal H.P.
 MULTI
 Manufacture
 Total H.P.
 No. and D
 Tested by
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 In case of
 Smallest d
 Smallest d
 Largest in
 Thickness
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Certificate to be sent to
 (The Surveyors are requested not to write on or below the space for Committee's Minute.)