

N.E.M. Machy. Installing No 3109.

No. 102835

REPORT ON STEAM RECIPROCATING ENGINE MACHINERY.

Date of writing Report 19 45 When handed in at Local Office 3.5.45 Port of NEWCASTLE-ON-TYNE
 No. in Survey held at Newcastle Date, First Survey (1944) April 29th Last Survey 18-4-1945
 Reg. Book on the S/S EMPIRE NAIROBI. (Number of Visits 78) Tons {Gross 6685.11
 Built at Sunderland By whom built Short Bros. Yard No. 484. When built 1945.
 Engines made at TWC (WallSEND) By whom made N.E. Mar. Eng. Co. (1938) Ltd Engine No. 3108. When made 1945.
 Boilers made at " By whom made ditto Boiler No. 3070. When made "
 Registered Horse Power 510. Owners Min. of War Transport Port belonging to "
 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 Ocean going.

ENGINES, &c.—Description of Engines 3 Cyl. Triple Exp^d Revs. per minute 76.
 Dia. of Cylinders 24 1/2, 37, 70 Length of Stroke 48" No. of Cylinders 3. No. of Cranks 3.
 Crank shaft, dia. of journals as per Rule 13.98" Crank pin dia. 14 1/4" Mid. length breadth 25 1/2" Thickness parallel to axis 9" + 1/2"
as fitted 14 1/4" Crank webs 9" + 1/2" shrunk. Thickness around eye-hole 7/8 + 7/32"
 Intermediate Shafts, diameter as per Rule 13.32" Thrust shaft, diameter at collars as per Rule 13.98"
as fitted 13 9/8" as fitted 14 1/4"
 Tube Shafts, diameter as per Rule 14.84" Is the screw shaft fitted with a continuous liner Yes
as fitted 15 1/4" as fitted 15 1/4"
 Bronze Liners, thickness in way of bushes as per Rule .753" Thickness between bushes as per Rule .565" Is the after end of the liner made watertight in the
as fitted .812" as fitted .656" 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 In one piece
 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 a tight fit.
 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
 Shaft No If so, state type ✓ Length of Bearing in Stern Bush next to and supporting propeller 61"
 Propeller, dia. 18-3" Pitch 15-6" No. of Blades 4 Material C. Iron whether Moveable No Total Developed Surface 985 sq. feet
 Feed Pumps worked from the Main Engines, No. ✓ Diameter ✓ Stroke ✓ Can one be overhauled while the other is at work ✓
 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.
 Pumps } No. and size Two of 7 x 9 1/2 x 21" Pumps connected to the } No. and size G.S.P. 9 1/2 x 7 x 21" Bell. P. Two of 4 1/2 x 26"
 Pumps } How driven by steam 49 9 1/2 x 7 x 21" Main Bilge Line } How driven by steam 40 tons/hr 250 tons/hr each 20.5 tons/hr
 Ballast Pumps, No. and size ONE 10 1/2 x 13 x 24" Lubricating Oil Pumps, including Spare Pump, No. and size ✓
 Are two independent means arranged for circulating water through the Oil Cooler ✓ Suctions, connected to both Main Bilge Pumps and Auxiliary
 Bilge Pumps:—In Engine and Boiler Room 1 of 3" P. side of E.R.; 1 of 3" in Thrust Recess; 2 of 3" in Blr Rm; 1 of 2 1/2" in Tunnel Well,
 In Pump Room ✓ In Holds, &c. 2 of 3" in each hold.

Main Water Circulating Pump Direct Bilge Suctions, No. and size one of 9" in P. side Independent Power Pump Direct Suctions to the Engine Room Bilges,
 No. and size one of 5 on S. side E.R. 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 NIL How are they protected ✓
 What pipes pass through the deep tanks NIL. 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 Yes Is it fitted with a watertight door No worked from ✓

MAIN BOILERS, &c.—(Letter for record S.) Total Heating Surface of Boilers 7248 sq. ft.
 Which Boilers are fitted with Forced Draft all. Which Boilers are fitted with Superheaters all.
 No. and Description of Boilers 3. S.B. (Spt.) Working Pressure 220 lbs/sq. in.
 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 Standard Main Boilers 17-11-43 Auxiliary Boilers ✓ Donkey Boilers ✓
 (If not state date of approval) "B" Type
 Superheaters NEM. Standard General Pumping Arrangements Oil fuel Burning Piping Arrangements ✓
Pumping Arrangements in E+R Spaces, 11-4-45.
 SPARE GEAR.
 Has the spare gear required by the Rules been supplied Yes
 State the principal additional spare gear supplied as per specifi.

The foregoing is a correct description.

THE NORTH EASTERN MARINE ENGINEERING CO. (1938) LTD;

John Neill

Manufacturer.

DIRECTOR.



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Lloyd's Register Foundation

012211-012220-0104

Dates of Survey while building

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

During erection on board vessel ---

Total No. of visits 78

Dates of Examination of principal parts --- Cylinders 24-11-44 Slides 26-1-45 Covers 24-11-44

Pistons 26-1-45 Piston Rods 26-1-45 Connecting rods 26-1-45

Crank shaft 14-11-44 Thrust shaft 7-11-44 Intermediate shafts 30-11-44

Tube shaft ✓ Screw shaft 29-1-45 Propeller 27-2-45

Stern tube 4-1-45 Sld. Engine and boiler seatings 27-2-45 & 8-3-45 Engines holding down bolts 8-3-45

Completion of fitting sea connections 8-1-45 Sld.

Completion of pumping arrangements 26-3-45 Boilers fixed 21-3-45 Engines tried under steam 26-3-45

Main boiler safety valves adjusted 26-3-45 Thickness of adjusting washers PORT. BLR. 1/4 1/32 STARR B. 3/8 24/64 23/64 9/32 9/32

Crank shaft material F. Stl. Identification Mark LLOYDS 14-11-44 AW Thrust shaft material F. Steel Identification Mark LLOYDS 3883 T.T.

Intermediate shafts, material F. Stl. Identification Marks LLOYDS 4048 T.T. (two), 4058 T.T. (two), 4061 T.T., 4073 T.T. Tube shaft, material Identification Mark

Screw shaft, material F. Stl. Identification Mark LLOYDS 3883 T.T. Steam Pipes, material S.D. Steel (OH) Test pressure 600 lbs. Date of Test 5th to 21st March 1945

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 No desired.

Is this machinery duplicate of a previous case Similar to. If so, state name of vessel Empire Mandarin NEM. No. 3069.

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

The Machinery of this vessel has been constructed and installed under special survey in accordance with the approved plans, Specification and the Society's Rules, and the materials and workmanship are good. It is eligible, in my opinion, to be classed and to have record + LMC. 4.45, and the notations 3 SB (Spt), WP. 220 lbs. FD. CL.

The amount of Entry Fee ... £ 6 : - : When applied for,

Special ... £ 100 : 10/- : - 7 MAY 1945

+ 25% for Special Survey Donkey Boiler Fee ... £ 25 : 2/6 : When received,

Travelling Expenses (if any) £ - : : 19

A. Watt.
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute ... FRL 18 MAY 1945

Assigned + LMC 4.45
F.D. C.L. Spt.



NEWCASTLE-ON-TYNE

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