

REPORT ON STEAM RECIPROCATING ENGINE MACHINERY.

Date of writing Report 19... When handed in at Local Office **23 FEB 1943** Port of **Sunderland** Received at London Office...
 No. in Survey held at **Sunderland** Date, First Survey **Jan 22** Last Survey **Feb 4** 1943
 Reg. Book... on the **EMPIRE HARRY** (Number of Visits...)
 Built at **Goole** By whom built **Goole S B & R Co** Yard No. **387** When built **1943**
 Engines made at **Wigan** By whom made **Walker Bros** Engine No. **43290** When made **1942**
 Boilers made at **Hartlepool** By whom made **Central Marine Eng W** Boiler No. **R 354** When made **1942**
 Registered Horse Power... Owners **Ministry of Shipping** Port belonging to...
 Nom. Horse Power as per Rule **197** Is Refrigerating Machinery fitted for cargo purposes... Is Electric Light fitted **Yes**
 Trade for which vessel is intended **LHP 1150** **Towing Purposes**

ENGINES, &c.—Description of Engines **See Liverpool Report N° 118665** Revs. per minute...
 Dia. of Cylinders... Length of Stroke... No. of Cylinders... No. of Cranks...
 Crank shaft, dia. of journals... Crank pin dia. **8.66"** Crank webs... Mid. length breadth... Thickness parallel to axis...
 Intermediate Shafts, diameter... as per Rule **8.75"** Thrust shaft, diameter at collars... as per Rule **9.09"**
 Tube Shafts, diameter... as per Rule... Screw Shaft, diameter... as per Rule **10.04"** Is the **tube** shaft fitted with a continuous liner **No**
 Bronze Liners, thickness in way of bushes... Thickness between bushes... Is the after end of the liner made watertight in the propeller boss...
 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...
 Propeller, dia. **11'-6"** Pitch **11'-7 1/2"** No. of Blades **4** Material **CI** whether Moveable **NO** Total Developed Surface **50** sq. feet
 Feed Pumps worked from the Main Engines, No. ... Diameter ... Stroke ... Can one be overhauled while the other is at work **yes**
 Bilge Pumps worked from the Main Engines, No. ... Diameter ... Stroke ... Can one be overhauled while the other is at work **yes**
 Feed Pumps { No. and size **1-7" x 5" x 8"** Pumps connected to the Main Bilge Line { No. and size **1-7" x 7" x 8"**
 How driven **Steam** How driven **Steam**
 Ballast Pumps, No. and size **1-7" x 7" x 8"** 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 **ENGINE ROOM 2-2 1/2" dia** **BOILER ROOM 1-2 1/2"**
 In Pump Room... In Holds, &c. **FORWARD COMPARTMENT 1-2 1/2"**
 Main Water Circulating Pump Direct Bilge Suctions, No. and size **1-7" dia** Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size **1-3" dia + 1-3" dia BR**
 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... 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... How are they protected...
 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... **no tunnel** Is it fitted with a watertight door... worked from...

MAIN BOILERS, &c.—(Letter for record **S**) Total Heating Surface of Boilers... **3020 sq ft**
 Which Boilers are fitted with Forced Draft... **Main Boiler** Which Boilers are fitted with Superheaters... **none**
 No. and Description of Boilers **1 SE Cylindrical** Working Pressure... **215 lbs/10"**
 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... Main Boilers... Auxiliary Boilers... Donkey Boilers...
 Superheaters... General Pumping Arrangements **25/8/42** Oil fuel Burning Piping Arrangements **25/8/42**

SPARE GEAR.
 Has the spare gear required by the Rules been supplied... **Spare gear not checked.**
 State the principal additional spare gear supplied... **Spare gear and outfit supplied to comply with the Rules Specification.**

The foregoing is a correct description.
 JOHN DICKINSON & SONS LTD.
 W. H. H. J. H. J.
 RESIDENT MANAGER

Manufacturer.
 W1185-0066



During progress of work in shops -- { 1942. Sep 28, 30. Oct 5, 8. Nov 5, 7, 9, 10, 11, 13, 16, 17, 19, 20, 24, 26, 30. Dec 3, 9, 10, 14, 15
 17, 18, 21, 22, 24, 28, 29, 31. 48. Jan 5, 6, 7, 8, 13, 14, 15, 16, 18, 20, 21, 25, 26, 27, 30. Feb 2, 3, 4.

Dates of Survey while building During erection on board vessel ---
 Total No. of visits 48

Dates of Examination of principal parts—Cylinders — Slides — Covers —
 Pistons — Piston Rods — Connecting rods —
 Crank shaft — Thrust shaft 9/10/42 Good Intermediate shafts 9/10/42 Good
 Tube shaft — Screw shaft 9/10/42 Good Propeller 9/10/42 12/10/42 Good
 Stern tube 9/10/42 Good Engine and boiler seatings 24/11/42 Engines holding down bolts 31/12/42
 Completion of fitting sea connections 12/10/42 Good
 Completion of pumping arrangements 25/1/43 Boilers fixed 15/12/42 Engines tried under steam 27/1/43
 Main boiler safety valves adjusted 27/1/43 Thickness of adjusting washers Forward 7/16" Aft 3/8"
 Crank shaft material — Identification Mark — Thrust shaft material Forged Engot Steel Identification Mark JFC 22/5/42
 Intermediate shafts, material Steel Identification Marks JFC 22/5/42 Tube shaft, material — Identification Mark —
 Screw shaft, material Forged Engot Steel Identification Mark JFC 22/5/42 Steam Pipes, material Steel Test pressure 645 lb/10" Date of Test 16/11/42
 Is an installation fitted for burning oil fuel yes Is the flash point of the oil to be used over 150° F. yes
 Have the requirements of the Rules for the use of oil as fuel been complied with yes
 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. — If so, state name of vessel. —

General Remarks (State quality of workmanship, opinions as to class, &c.)
 The machinery of this vessel mentioned in Liverpool Report N° 118665 has been efficiently fitted on board in accordance with approved plans, specification & the requirements of the Rules & has been tried under working conditions at the Quayside & found satisfactory. It is in my opinion eligible for the NOTATION * LMC with date when acceptance trial has been carried out fitted to burn Oil Fuel (FP above 150°F). The acceptance trial will be held at Gool.

NOTE :- The following steam pipes are made by the Cutty-Moon process
 Steam to Capstan, Feed Donkey Pump, General Service Pump & Circulating Pump.

The acceptance trial was carried out at Gool as stated above and found satisfactory. W.S.S.

The amount of Entry Fee ... £ 3 : : : When applied for,
 Special Specification ... £ 9 : 17 : 2 3 FEB 1943
 Donkey Boiler Fee ... £ 2 : 9 : : When received,
 Travelling Expenses (if any) £ : : : 19.

J Grieve
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute ... FRI. 30 APR 1943
 Assigned ... + LMC 4.43
 FD EG



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