

DIESEL ELECTRIC REPORT ON ENGINE MACHINERY.

No. 77102

Date of writing Report 29.5.1951 When handed in at Local Office 29.5.1951 Port of GLASGOW

Received at London Office 11 JUN 1951

No. in Survey held at DUMBARTON Date, First Survey 31/10/50 Last Survey 24/4/1951

Reg. Book. 95754 on the ^{Single} ~~Twin~~ ~~Triple~~ ~~Quadruple~~ Screw vessel "ROYAL IRIS" Tons Gross 1234.03 Net 622.28

Built at DUMBARTON By whom built W. DUNN & BROS., LTD. Yard No. 1448 When built 4/1951

Engines made at LINCOLN By whom made RUSTON & HORNSBY LTD. Engine No. 284611-273-4 When made 4/1951

Propulsion Motors - MANCHESTER Boilers made at ANJAN By whom made METROPOLITAN-VICKERS ELECTRICAL CO. LTD. COCHRAAN & CO. ANJAN, LTD. Boiler No. 18843 When made 4/1951

Horse Power MAX 1460. SERVICE 1080. Owners WALLASEY CORPORATION Port belonging to LIVERPOOL

M.N. Power as per Rule 271 NHP = 246 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted YES

Trade for which vessel is intended FOR FERRY SERVICE ON THE RIVER MERSEY.

OIL ENGINES, &c. (4 ENGINES) Type of Engines RUSTON & HORNSBY 6VEBXZ 2 or 4 stroke cycle 4 Single or double acting S.A.

Maximum pressure in cylinders 735 lbs/sq. in. Diameter of cylinders 10 1/4 Length of stroke 14 1/2 No. of cylinders 4x6 No. of cranks

Mean Indicated Pressure 99.5 lbs/sq. in. Ahead Firing Order in Cylinders Span of bearings, adjacent to the crank, measured from inner edge to inner edge Is there a bearing between each crank No. of revolutions per minute 215

Flywheel dia. Weight Moment of inertia of flywheel (in sq. in. or Kg. cm. 2) Means of ignition Kind of fuel used

Crank Shaft, Solid forged dia. of journals as per Rule as fitted Semi built All built Crank pin dia. Crank webs Mid. length breadth Mid. length thickness Thickness parallel to axis Thickness around eye-hole

Flywheel Shaft, diameter as per Rule as fitted Intermediate Shafts, diameter as per Rule as fitted Thrust Shaft, diameter at collars as per Rule as fitted

Tube Shaft, diameter as per Rule as fitted Screw Shaft, diameter as per Rule as fitted Is the screw shaft fitted with a continuous liner No

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 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

Propeller, dia. 7'-0" Pitch 8'-3" MAX No. of blades 3 Material MANGANESE BRASS whether moveable No Total developed surface 10.5 sq. feet

Moment of inertia of propeller (in sq. in. or Kg. cm. 2) Kind of damper, if fitted

Method of reversing Engines Non-Reversible Is a governor or other arrangement fitted to prevent racing of the engine when declutched

lubrication FORCED Thickness of cylinder liners Are the cylinders fitted with safety valves Are the exhaust pipes and silencers lagged with non-conducting material

back to the engine Cooling Water Pumps, No. 2 G.S. & 1 BILGE PUMP EACH OF 35 TONS CAPACITY. Is the sea suction provided with an efficient strainer which can be cleared within the vessel

Bilge Pumps worked from the Main Engines, No. NONE Diameter Stroke Can one be overhauled while the other is at work

Pumps connected to the Main Bilge Line How driven ELECTRIC MOTORS

Is the cooling water led to the bilges No If so, state what special arrangements are made to deal with this water in addition to the ordinary bilge pumping arrangements

Ballast Pumps, No. and size NONE Power Driven Lubricating Oil Pumps, including spare pump, No. and size 2 EACH ENGINE (8 IN ALL)

Are two independent means arranged for circulating water through the Oil Coolers NO Suctions, connected to both main bilge pumps and auxiliary bilge pumps, No. and size: 3 x 2 1/2

In holds, &c. CREWS MESS FORD. 1x2. FORD. SPACE BELOW SMOKE ROOM 2x2. WATERTIGHT COMP. AFT 1x2.

Independent Power Pump Direct Suctions to the engine room bilges, No. and size 3 x 2 1/2

Are all the bilge suction pipes in holds and tunnel well fitted with strum-boxes YES Are the bilge suction in the machinery spaces 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 YES Are they fixed sufficiently high on the ship's side to be seen without lifting the platform plates YES

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 MAID ENGINE & COOLER CIRCULATING WATER DISCHARGES OVERBOARD How are they protected STEEL PIPES

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 NONE Is it fitted with a watertight door worked from

If a wood vessel, what means are provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork

Main Air Compressors, No. ONE No. of stages TWO diameters stroke driven by ELECT. MOTOR

Auxiliary Air Compressors, No. ONE No. of stages ONE diameters 3 1/2 stroke 3 1/2 driven by DIESEL ENGINE

Small Auxiliary Air Compressors, No. No. of stages diameters stroke driven by

What provision is made for first charging the air receivers AUXILIARY AIR COMPRESSOR

Scavenging Air Pumps, No. diameter stroke driven by

Auxiliary Engines crank shafts, diameter as per Rule as fitted No. 2 Position ENG. ROOM BETWEEN INBOARD PROPELLION DIESEL GENERATORS

Have the auxiliary engines been constructed under special survey YES Is a report sent herewith YES

011636-011645-0228

AIR RECEIVERS:—Have they been made under survey YES State No. of report or certificate YES
 Is each receiver, which can be isolated, fitted with a safety valve as per Rule YES
 Can the internal surfaces of the receivers be examined and cleaned PARTIALLY-TWO SMALL HANDHOLES Is a drain fitted at the lowest part of each receiver YES
 Injection Air Receivers, No. 3 Cubic capacity of each 70.2 FT³ Internal diameter 21 1/2" thickness 3/8"
 Seamless, welded or riveted longitudinal joint ✓ Material ✓ Range of tensile strength ✓ Working pressure ✓
 Starting Air Receivers, No. 3 Total cubic capacity 70.2 FT³ Internal diameter 21 1/2" thickness 3/8"
 Seamless, welded or riveted longitudinal joint ✓ Material M.S. Range of tensile strength ✓ Working pressure 300 lbs.

IS A DOMESTIC BOILER FITTED YES If so, is a report now forwarded YES
 Is the boiler intended to be used for domestic purposes only - NO. ALSO USED FOR STEAMING OUT TANKS AND WEEO CLEANING.

PLANS. Are approved plans forwarded herewith for shafting YES Receivers ✓ Separate fuel tanks ✓
 (If not, state date of approval) YES Donkey boilers ✓ General pumping arrangements YES Pumping arrangements in machinery space YES
 Oil fuel burning arrangements ✓ Have Torsional Vibration characteristics been approved YES Date of approval 13/9/49
MAN 12/12/49
MAIN SHAFTING 24/11/49
FOR 195/2157

Has the spare gear required by the Rules been supplied YES **SPARE GEAR.**
 State the principal additional spare gear supplied COMPLETE LIST OF SPARE GEAR APPENDED.

For **WILLIAM DENNY & GROS, LTD.**

Director

The foregoing is a correct description,

Manufacturer.

Dates of Survey while building
 During progress of work in shops - - 1950. OCT. 31, NOV. 9, 14, 21. DEC. 14, 21, 1951. JAN. 11, 23, 30. FEB. 6, 8, 15.
 During erection on board vessel - - 1950. OCT. 31, NOV. 14, 23, 24, 30. DEC. 5, 7, 8, 12, 19, 26, 1951. JAN. 4, 9, 11, 16, 23, 28, 30.
1951. FEB. 1, 13, 18, 20, MAR. 1, 6, 8, 20, 27, 29, APR. 3, 5, 12, 16, 19, 24.
 Total No. of visits 52.

Dates of examination of principal parts—Cylinders ✓ Covers ✓ Pistons ✓ Rods ✓ Connecting rods ✓
 Crank shaft 9/11/50 To 30/11/50 Flywheel shaft 9/11/50 To 24/11/50 Thrust shafts 9/11/50 To 24/11/50 Intermediate shafts 21/11/50 To 21/12/50 Tube shaft 15/2/51 To 20/2/51
 Screw shafts 9/11/50 To 30/11/50 Propellers 24/11/50 Stern tubes 24/11/50 Engine seatings 4/1/51 Engine holding down bolts 20/2/51
 Completion of fitting sea connections 5/12/50 Completion of pumping arrangements 16/4/51 Engines tried under working conditions 24/4/51
 Crank shaft, material ✓ Identification mark ✓ Flywheel shaft, material ✓ Identification mark ✓
 Thrust shaft, material ✓ Identification mark ✓ Intermediate shafts, material M.S. 28/52 Identification marks ✓
 Tube shaft, material ✓ Identification mark ✓ (Screw shaft, material M.S. 28/52 Identification mark ✓)
 Identification marks on air receivers (3 OFF) 6N, 309, 6N110 & 6N111
ALL RECEIVERS ALSO MARKED:- LLOYD'S TEST 600 lbs.
W.P. 300 lbs.
J.B.T. 4/12/50

Welded receivers, state Makers' Name RUSTON & HORNSBY LTD.
 Is the flash point of the oil to be used over 150°F YES. ✓
 Have the requirements of the Rules for oil fuel pipes and tank fittings been complied with YES
 Description of fire extinguishing apparatus fitted 2 1/2" DIA. HOSE CONNECTIONS ON DISCHARGE SIDE OF BINKE & GENERAL SERVICE PUMP
FOAM EXTINGUISHERS - 4 X 10 GALLS., 3 X 2 GALLS., 2 HAND EXTINGUISHERS & SAND BOX.
 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 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 AND IN ACCORDANCE WITH THE APPROVED PLANS AND THE RULES OF THIS SOCIETY. THE MATERIALS AND THE WORKMANSHIP ARE GOOD. THE MACHINERY HAS BEEN EFFICIENTLY INSTALLED ON BOARD THE VESSEL AND AFTERWARDS TESTED UNDER FULL WORKING CONDITIONS WITH SATISFACTORY RESULTS. THE MACHINERY IS ELIGIBLE, IN MY OPINION, TO BE CLASSED IN THE REGISTERED BOOK WITH THE RECORD OF + LMC 4/51 AND THE NOTATIONS 'DIESEL ELECTRIC', T.S. O.G., 1 DB 60 lbs. (FITTED FOR OIL FUEL 4/51, F.P. ABOVE 150°F. ?)

(1/3 OF 1127-11-0)
 The amount of Entry Fee ... £ 42-10-4
 Special ... £ : : When applied for 30 MAY 1951
 Donkey Boiler Fee... £ : : When received 19
 Travelling Expenses (if any) £ : :

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

Committee's Minute GLASGOW 30 MAY 1951
 Assigned 1-11-51 all Eng.
N.B. 105 lb.

