

REPORT ON OIL ENGINE MACHINERY.

No. 14660

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Date of writing Report 19 When handed in at Local Office 26/11/48 Port of Belfast
 No. in Survey held at Belfast Date, First Survey 24 Oct 1947 Last Survey 10 Nov 1948
 Reg. Book. Number of Visits 170

Single Screw vessel "BRITISH STRENGTH" Tons Gross
 Triple
 Quadruple
 Built at Belfast By whom built Harland & Wolff Yard No. 1365 When built 1948
 Engines made at do By whom made do Engine No. 1365 When made 1948
 Monkey Boilers made at do By whom made do Boiler No. 1365 When made 1948
 Indicated Horse Power 3200 METRIC Owners Port belonging to London
 N. Power as per Rule 695 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted yes
 Made for which vessel is intended Carrying Petroleum in Bulk

ENGINES, &c. — Type of Engines H & W Heavy Oil 2 or 4 stroke cycle 4 Single or double acting single
 Maximum pressure in cylinders 650 lb/sq. in. Diameter of cylinders 740 mm Length of stroke 1500 mm No. of cylinders 6 No. of cranks 6
 Mean Indicated Pressure 128 lb/sq. in. Ahead Firing Order in Cylinders 1-5-3-6-2-4 Span of bearings, adjacent to the crank, measured
 from inner edge to inner edge 972 mm Is there a bearing between each crank yes Revolutions per minute 115
 Flywheel dia. 2489 mm Weight 2590 kg Moment of inertia of flywheel (16 lbs. in² or Kg. cm.²) 2353 x 10⁴ Means of ignition comp. Kind of fuel used Heavy Oil
 Crankshaft, Solid forged dia. of journals as per Rule as app'd Crank pin dia. 505 mm Crank webs Mid. length breadth 840 mm Thickness parallel to axis 310 mm
 Semi-built as fitted 505 mm with 115 mm central hole with 230 mm central hole Mid. length thickness 310 mm Thickness around eye hole 222.5 mm
 All built as per Rule as app'd
 Flywheel Shaft, diameter as fitted Intermediate Shafts, diameter as fitted 17" Thrust Shaft, diameter at collars as fitted 4.54 mm
 Tube Shaft, diameter as fitted Screw Shaft, diameter as fitted 16" Is the tube shaft fitted with a continuous liner yes
 Bronze Liners, thickness in way of bushes as per Rule as app'd Thickness between bushes as per Rule as app'd 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
 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 tube shaft no If so, state type Length of bearing in Stern Bush next to and supporting propeller 5'-0"
 Propeller, dia. 15'-6" Pitch 10' at root No. of blades 4 Material Mn. Bronze whether moveable solid Total developed surface 75 sq. feet
 Moment of inertia of propeller (16 lbs. in² or Kg. cm.²) Kind of damper, if fitted
 Method of reversing Engines compressed air Is a governor or other arrangement fitted to prevent racing of the engine when decoupled yes Means of
 lubrication forced Thickness of cylinder liners 5.3 mm Are the cylinders fitted with safety valves yes Are the exhaust pipes and silencers water cooled
 lagged with non-conducting material lagged If the exhaust is fed overboard near the waterline, what means are arranged to prevent water from being syphoned
 back to the engine Cooling Water Pumps, No. 2- F.W. Is the sea suction provided with an efficient strainer which can be cleared within the vessel yes
 Bilge Pumps worked from the Main Engines, No. Diameter Stroke Can one be overhauled while the other is at work
 Pumps connected to the Main Bilge Line No. and size 1 Bilge @ 100 t/hr. 1 Sanitary @ 100 t/hr. 1 Ballast @ 170 t/hr.
 How driven steam steam steam
 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 1 @ 170 t/hr. Power Driven Lubricating Oil Pumps, including spare pump, No. and size 1 @ 100 t/hr. also 1 attached @ 100 t/hr.
 Are two independent means arranged for circulating water through the Oil Cooler yes Suctions, connected to both main bilge pumps and auxiliary
 bilge pumps, No. and size:—In machinery spaces 3 @ 3 1/2" d. In pump room main 2 @ 3" d. Fed 1 @ 2 1/2" d.
 Holds, &c. Fore hold 2 @ 2" d. (hand)
 Independent Power Pump Direct Suctions to the engine room bilges, No. and size 2 @ 6" d. 1 @ 8" d.
 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 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 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 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. 2 No. of stages 2 diameters 280 x 245 mm stroke 130 mm driven by steam
 Auxiliary Air Compressors, No. No. of stages diameters stroke driven by
 Small Auxiliary Air Compressors, No. No. of stages diameters stroke driven by
 What provision is made for first charging the air receivers steam driven air compressor
 scavenging Air Pumps, No. Under-fiston Supercharger diameter stroke driven by
 Auxiliary Engines crank shafts, diameter as per Rule No. Position
 Have the auxiliary engines been constructed under special survey Is a report sent herewith

15/12/48

004534-004540-0157

AIR RECEIVERS:—Have they been made under survey. *yes* State No. of report or certificate. *14 X 87. Receiver 413, 4*
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. *yes* Is a drain fitted at the lowest part of each receiver. *yes*
Injection Air Receivers, No. — Cubic capacity of each — Internal diameter — thickness —
Seamless, welded or riveted longitudinal joint. — Material — Range of tensile strength — Working pressure *by Rules. — Actual. —*
Starting Air Receivers, No. *2* Total cubic capacity. *800 cu. ft.* Internal diameter. *5'-8 1/4"* thickness. *1 1/2"*
Seamless, welded or riveted longitudinal joint. *fusion welded* Material. *steel* Range of tensile strength *29/33 1/2* Working pressure *by Rules. — Actual. 356 lbs/sq. in.*
IS A DONKEY BOILER FITTED *yes* If so, is a report now forwarded. *yes*
Is the donkey boiler intended to be used for domestic purposes only. *no*
PLANS. Are approved plans forwarded herewith for shafting. *4.11.46* Receivers. *7.11.46* Separate fuel tanks. *16.6.46*
(If not, state date of approval)
Donkey boilers. *7.11.46* General pumping arrangements. *31.6.48* Pumping arrangements in machinery space. *10.6.48*
Oil fuel burning arrangements. *13.7.48*
Have Torsional Vibration characteristics been approved. *yes* Date of approval. *3.12.46*
SPARE GEAR.
Has the spare gear required by the Rules been supplied. *yes*
State the principal additional spare gear supplied. *see attached list*

For HARLAND & WOLFF, LIMITED.
The foregoing is a correct description, and the particulars of the installation as fitted are as approved for torsional vibration characteristics. *Manufacturer.*
Dates of Survey while building
During progress of work in shops — *1947*
During erection on board vessel — *1948*
Total No. of visits. *170*
Dates of examination of principal parts—Cylinders. *3.5.48* Covers. *19.4.48* Pistons. *20.1.48* Rods. *20.4.48* Connecting rods. *4.5.48*
Crank shaft. *5.3.48* Flywheel shaft. — Thrust shaft. *5.3.48* Intermediate shafts. *14.5.48* Tube shaft. —
Screw shaft. *14.5.48* Propeller. *3.5.48* Stern tube. *19.1.48* Engine seatings. *11.6.48* Engine holding down bolts. *12.8.48*
Completion of fitting sea connections. *11.6.48* Completion of pumping arrangements. *3.11.48* Engines tried under working conditions. *11.11.48*
Crank shaft, material. *steel* Identification mark. *No 1206 A.D.* Flywheel shaft, material. — Identification mark. —
Thrust shaft, material. *steel* Identification mark. *5.8130 A.D.* Intermediate shafts, material. *steel* Identification marks. *5.7759. R.O.B.*
Tube shaft, material. — Identification mark. — Screw shaft, material. *steel* Identification mark. *5.7881. R.O.B.*
Identification marks on air receivers. *No 413. R.O.B. 24.3.48.* *No 414. R.O.B. 24.3.48.*
Welded receivers, state Makers' Name. *Harland & Wolff. Belfast.*
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. *Steam smothering in boiler room. Portable foam type in engine room.*
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. *except - pumping arrangements* If so, state name of vessel. *M.V. British Security Bel. Rpt No. 145*

General Remarks (State quality of workmanship, opinions as to class, &c.)
This machinery has been constructed under Special Survey in accordance with the Society Rules and Regulations and the Secretary's letters. The scantlings and arrangements are in accordance with the approved plans.
The materials and workmanship are good.
The machinery has been efficiently installed on board the vessel and tested under full working conditions at sea, with satisfactory results.

In our opinion this machinery is eligible to receive the notation:—
** LMC 11-48. Oil Engine T.S.C.H. 2 D.B. 150 lbs/sq. in.*

The amount of Entry Fee ... £ :
Special ... LMC ... £ 214 : 0 :
Donkey Boiler Fee... 2 ... £ 59 : 2 :
Air receivers 2 ... £ 16 : 0 :
Travelling Expenses (if any) £ : :
When applied for *26/11/48*
When received *19*
A. Trautman
for E. Grive
Engineer Surveyor to Lloyd's Register of Shipping

Committee's Minute *FRI. 17 DEC 1948*
Assigned *+ LMC 11.48 Oil Eng.*
C.L. 2DB 150lb.