

Rpt. 4b.

REPORT ON OIL ENGINE MACHINERY.

No. 59141

Received at London Office JAN 6 1938

Date of writing Report 19 38 When handed in at Local Office 8 1 10 38 Port of Glasgow
 No. in Survey held at Glasgow Date, First Survey 12 11 36 Last Survey 29 12 37
 Reg. Book. Number of Visits 5 4

on the Single Twin Triple Quadruple Screw vessel "**BRITISH SECURITY**" Tons Gross 8470.35
Net 4978.70
 Built at Glasgow By whom built Harland & Wolff Ltd. Yard No. 974 When built 1937
 Engines made at Glasgow By whom made Harland & Wolff Ltd. Engine No. 974 When made 1937
 Donkey Boilers made at Belfast By whom made Harland & Wolff Ltd. Boiler No. 974 When made 1937
 Brake Horse Power 2880 at 105 R.P.M. Owners British Tanker Co. Ltd. Port belonging to London
 Nom. Horse Power as per Rule 490 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted yes
 Trade for which vessel is intended Oil tanker.

IL ENGINES, &c. Type of Engines Solid injection 2 or 4 stroke cycle 4 Single or double acting S.A.
 Maximum pressure in cylinders 700 lb Diameter of cylinders 740 mm. Length of stroke 1500 mm. No. of cylinders 6 No. of cranks 6
 Mean Indicated Pressure 128

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 105 Flywheel dia. 2489 mm. Weight 2540 Kp Means of ignition Compression Kind of fuel used Diesel Oil

Crank Shaft, dia. of journals as per Rule 483 mm. Crank pin dia. 505 mm. Crank Webs Mid. length breadth 840 mm. Thickness parallel to axis 310 mm.
 as fitted 505 mm. Mid. length thickness 310 mm. shrunk Thickness around eye hole 222.5 mm.

Flywheel Shaft, diameter as per Rule 483 mm. Intermediate Shafts, diameter as per Rule 13.6" Thrust Shaft, diameter at collars as per Rule 14.3"
 as fitted 17" as fitted 17" as fitted 14.3"

Tube Shaft, diameter as per Rule 15" Screw Shaft, diameter as per Rule 17" Is the lubricator shaft fitted with a continuous liner yes
 as fitted 15" as fitted 17"

Bronze Liners, thickness in way of bushes as per Rule .758" Thickness between bushes as per rule .57" Is the after end of the liner made watertight in the
 as fitted 3/8" as fitted 11/16" propeller boss no If the liner is in more than one length are the junctions made by fusion through the whole thickness of the liner no

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 no
 If two liners are fitted, is the shaft lapped or protected between the liners no Is an approved Oil Gland or other appliance fitted at the after end of the tube shaft no If so, state type no Length of Bearing in Stern Bush next to and supporting propeller 5.0"

Propeller, dia. 17.0" Pitch 11.6" No. of blades 4 Material Mg. Bronze whether Moveable no Total Developed Surface 89 sq. feet

Method of reversing Engines Direct Is a governor or other arrangement fitted to prevent racing of the engine when declutched yes Means of lubrication forced
 Thickness of cylinder liners 536.32 mm. Are the cylinders fitted with safety valves yes Are the exhaust pipes and silencers water cooled or lagged with non-conducting material lagged If the exhaust is led overboard near the waterline, what means are arranged to prevent water from being syphoned back to the engine no

Cooling Water Pumps, No. Three 2 @ 100 Is the sea suction provided with an efficient strainer which can be cleared within the vessel yes
1 @ 150 ton/hour

Bilge Pumps worked from the Main Engines, No. no Diameter no Stroke no Can one be overhauled while the other is at work no
 Pumps connected to the Main Bilge Line { No. and Size 1 Ballast pump 150 ton per hour; 2 Bilge & Sanitary pumps each 100 ton/hour
 How driven Steam. (9x10x10) : Steam. (7x8x8)

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 no

Ballast Pumps, No. and size One 9x10x10 Power Driven Lubricating Oil Pumps, including Spare Pump, No. and size 2 @ 70 ton per hour.

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 Port drain hot 3 1/2"; Starb. drain hot 3 1/2"; Aft. well 3 1/2" In Pump Room 700 gal. pump room & each 2 @ 4"

In Holds, &c. Fore hold one 3" Port & one 3" Starb. Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size 2 @ 6" & 1 @ 4 1/2"

Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes yes Are the Bilge Suctions 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 both
 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 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 no How are they protected no
 What pipes pass through the deep tanks no Have they been tested as per Rule no

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 no

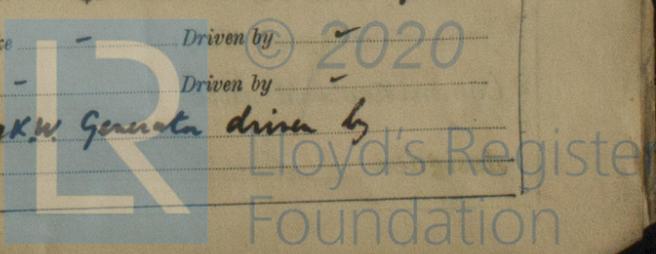
If a wood vessel, what means are provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork no

Main Air Compressors, No. no No. of stages no Diameters no Stroke no Driven by no
 Auxiliary Air Compressors, No. 2 No. of stages 2 Diameters 120 lbf air Stroke 356 lb per sq. in. at 450 RPM Driven by Steam engine.

Small Auxiliary Air Compressors, No. no No. of stages no Diameters no Stroke no Driven by no
 Scavenging Air Pumps, No. Under side of pistons Diameter no Stroke no Driven by no

Auxiliary Engines crank shafts, diameter as per Rule All auxy. machinery steam driven except 30 K.W. Generator driven by a Diesel engine. For lighting only.
 as fitted a Diesel engine.

W1140-0192



AIR RECEIVERS:— 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* ✓
High Pressure Air Receivers, No. *—* Cubic capacity of each *—* Internal diameter *—* thickness *—*
 Seamless, lap welded or riveted longitudinal joint *✓* Material *—* Range of tensile strength *—* Working pressure by Rules *—*
Starting Air Receivers, No. *Two* Total cubic capacity *900 cu ft.* Internal diameter *6'-0 5/16"* ✓ thickness *Shell 1" Stud 1 1/2"*
 Seamless, lap welded or riveted longitudinal joint *Riveted* Material *steel* Range of tensile strength *26/30 min* Working pressure by Rules *356 lb* Actual *" " "*

IS A DONKEY BOILER FITTED? *yes* ✓ *2* If so, is a report now forwarded? *yes. Belfast Rpt No. 11987*
 Is the donkey boiler intended to be used for domestic purposes only *no*

PLANS. Are approved plans forwarded herewith for Shafting (If not, state date of approval) *yes* Receivers *yes* Separate Fuel Tanks *yes*
 Donkey Boilers *yes* General Pumping Arrangements *yes* Pumping Arrangements in Machinery Space *yes*
 Oil Fuel Burning Arrangements *yes*

SPARE GEAR.

Has the spare gear required by the Rules been supplied *yes* ✓
 State the principal additional spare gear supplied *as per attached list.*

The foregoing is a correct description,
FOR HARLAND AND WOLFE, LIMITED.
Wm. J. Wright Manufacturer.

Dates of Survey while building
 During progress of work in shops-- *Finnlestone Secretary 1936 Nov: 12. 24 Dec: 2. 18 (1937) Jan: 15. 19. 27 Feb: 12 Mar: 11. 15 Apr: 21*
 During erection on board vessel-- *May: 4. 19. 31 July: 5 Aug: 2. 4. 8. 10. 12. 13. 17. 18. 20 Sep: 2. 3. 8. 13. 16. 17. 20. 21. 28 Oct: 4. 7. 11. 25*
 Total No. of visits *54 - Nov: 2. 3. 10. 18. 19. 22. 25. 26. 29 Dec: 6. 11. 14. 21. 24. 29*

Dates of Examination of principal parts—Cylinders *24.16-9-37* Covers *24.16-9-37* Pistons *10/17-8-37* Rods *10/17-8-37* Connecting rods *7-10-37*
 Crank shaft *4-8-37* Flywheel shaft *✓* Thrust shaft *20-9-37* Intermediate shafts *20-9-37* Tube shaft *✓*
 Screw shaft *20-9-37* Propeller *20-9-37* Stern tube *21-9-37* Engine sealings *27-10-37* Engines holding down bolts *6-12-37*
 Completion of fitting sea connections *27-10-37* Completion of pumping arrangements *21-12-37* Engines tried under working conditions *29-12-37*
 Crank shaft, Material *Steel* Identification Mark *974 P.9 + text no.* Flywheel shaft, Material *—* Identification Mark *—*
 Thrust shaft, Material *Steel* Identification Mark *6207 P.9.* Intermediate shafts, Material *Steel* Identification Marks *6075 P.9.*
 Tube shaft, Material *—* Identification Mark *—* Screw shaft, Material *Steel* Identification Mark *6268 P.9.*

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* ✓
 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 *yes* If so, state name of vessel *MV. "BROOMDALE" G.L. Rpt No. 59000.*

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

The machinery of this vessel has been built under Special Survey and in accordance with the approved plans and the Rules of this Society.
 The materials and workmanship are good.
 The machinery has been efficiently secured in position on board the vessel and after-wards tried under full working conditions with satisfactory results.
 The machinery is eligible in my opinion to be classed in the Register Book with notation of *1-LMC 12.37 C.L. 2DB. W.P. 150 lb.*

J. S. 1/1/37

The amount of Entry Fee .. £ 5 : - :
 Special £ 98 : 10 :
 Donkey Boiler Fee £ : :
 Travelling Expenses (if any) £ : :
 When applied for, *5 - JAN 1938*
 When received, *3/1 1938*

P. Fitzgibbon + G. E. Murdoch
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute *TUE 11 JAN 1938*

Assigned + Lmc 12.37 2 DB 150 lb oil eng. ch.

GLASGOW

in duplicate Certificates (if required) to be sent to (The Surveyors are requested not to write on or below the space for Committee's Minute.)



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