

REPORT ON OIL ENGINE MACHINERY.

No. 59000

Received at London Office

NOV 12

Date of writing Report 19 37 When handed in at Local Office 11. 19. 37 Port of Glasgow
 No. in Survey held at Glasgow Date, First Survey 12. 11. 36 Last Survey 3. 11. 19. 37
 Reg. Book. Number of Visits 50 51

on the Single Screw vessel "BROOMDALE" Tons { Gross 8334.22
Triple Net 4967.35
Quadruple
 Built at Glasgow By whom built Harland & Wolff Ltd. Yard No. 9736 When built 1937
 Engines made at Glasgow By whom made Harland & Wolff Ltd. Engine No. 973 When made 1937
 Donkey Boilers made at Belfast By whom made Harland & Wolff Ltd. Boiler No. 973 When made 1937
 Brake Horse Power 2850 @ 105 R.P.M. Owners The Admiralty. 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 Kgs. 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. 115 mm hole 230 mm hole Mid. length thickness 310 mm shrunk Thickness around eyehole 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 " Is the { tube } shaft fitted with a continuous liner { yes }
 as fitted 17 " as fitted 17 " 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 7/8 " as fitted 11/16 "
 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 yes
 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 yes
 If two liners are fitted, is the shaft lapped or protected between the liners yes 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 disengaged 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 yes
 Cooling Water Pumps, No. 1 @ 150 + 2 @ 250 ton/hour 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. 2 Diameter 10" Stroke 10" Can one be overhauled while the other is at work yes
 Pumps connected to the Main Bilge Line { No. and Size 1 Ballast Pump 150 ton per hour; 2 Bilge & Sanitary pumps each 100 ton per hour.
 How driven Steam (9' x 10' x 10') Steam (7' x 8' x 8')

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 yes
 Ballast Pumps, No. and size One 9' x 10' x 10' 150 ton per hour. 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"; Starboard drain hot 3 1/2"; Aft. well 3 1/2" In Pump Room 4ft. dia. - 2 @ 4"
 In Holds, &c. Fore hold, one 3" port & one 3" starboard.
 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 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 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 yes

Main Air Compressors, No. 2 No. of stages 2 Diameters 120 Gals. of air Stroke 356 lbs at Driven by Steam engine
 Auxiliary Air Compressors, No. Two No. of stages 2 Diameters 120 Gals. of air Stroke 356 lbs at Driven by Steam engine
 Small Auxiliary Air Compressors, No. 2 No. of stages 2 Diameters 120 Gals. of air Stroke 356 lbs at Driven by Steam engine
 Scavenging Air Pumps, No. Underside of pistons Diameter 120 Gals. of air Stroke 356 lbs at Driven by Steam engine
 Auxiliary Engines crank shafts, diameter as per Rule All auxy. machinery steam driven except 30 K.W. Generator driven
 as fitted by a Diesel engine. For lighting only.

Lloyd's Register
 Foundation

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... Actual...

Starting Air Receivers, No. *Two* Total cubic capacity *900 Cu. ft.* Internal diameter *6-0 5/16* thickness *Shell 1" Fms 1 1/2 + 1 1/2*

Seamless, lap welded or riveted longitudinal joint *Riveted* Material *steel* Range of tensile strength *26/30 mds* Working pressure *28/32 shell* by Rules *356 H.O.* Actual " " "

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... *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 WOLFF, LIMITED.
H.M. J. Blight Manufacturer.

Dates of Survey while building

During progress of work in shops... *Finniston Secretary 1936 Nov: 12. 24 Dec: 2 18 (1937) Jan: 15. 19. 27 Feb: 5. 12. 23 Apr: 2. 21. 29*

During erection on board vessel... *May: 4. 6. 17. 19. 31 June: 8. 21. 28 July: 5. 8. 9. 12. 13. 26. 28 Aug: 2. 5. 10. 13. 18. 20. 31 Sep: 1. 3*

Total No. of visits *50* 16. 17. 28 Oct: 1. 4. 11. 15. 18. 25. 26. 27 Nov: 3

Dates of Examination of principal parts—Cylinders *13-7-37* Covers *13-7-37* Pistons *8-7-37* Rods *8-7-37* Connecting rods *2-8-37*

Crank shaft *21-6-37* Flywheel shaft... Thrust shaft *21-6-37* Intermediate shafts *21-6-37* Tube shaft...
 Screw shaft *21-6-37* Propeller *28-6-37* Stern tube *28-6-37* Engine seatings *29-6-37* Engines holding down bolts *28-9-37*

Completion of fitting sea connections *31-8-37* Completion of pumping arrangements *27-10-37* Engines tried under working conditions *3-11-37*

Crank shaft, Material *Steel* Identification Mark *973 G.A.* Flywheel shaft, Material... Identification Mark...
 Thrust shaft, Material *Steel* Identification Mark *S.6206 G.A.* Intermediate shafts, Material *Steel* Identification Marks *S.6074 G.A.*
 Tube shaft, Material... Identification Mark... Screw shaft, Material *Steel* Identification Mark *S.6046 G.A.*

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... *yes* If so, have the requirements of the Rules been complied with... *yes*

If the notation for Ice Strengthening is desired, state whether the requirements in this respect have been complied with... *yes*

Is this machinery duplicate of a previous case *yes* If so, state name of vessel *"British Integrity," G.L. Regt 5877*

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 afterwards 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 *L.M.C. 11.37 C.L. 2DB WP 150 lb.*

25/11/37

The amount of Entry Fee... £ 5 : - : When applied for, 3. 11. 19. 37

Special... £ 98 : 10 : When received, 25/11 19. 37

Donkey Boiler Fee... £ : : 26/11

Travelling Expenses (if any) £ : : 26/11

P. Fitzgerald. H. Campbell.
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute **GLASGOW 9-NOV 1937**

Assigned *+ L.M.C. 11.37* *2DB-150lb.*



GLASGOW

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