

## REPORT ON OIL ENGINE MACHINERY.

No. 16000

Received at London Office

31 AUG 1950

Date of writing Report 19... When handed in at Local Office 29. 8. 1950 Port of Glasgow  
No. in Survey held at 6 Lydebank Date, First Survey 10<sup>th</sup> Jan 1949 Last Survey 18 August 1950  
Reg. Book. Number of Visits 23  
95005 on the <sup>Single</sup> ~~Twin~~ <sup>Triple</sup> ~~Quadruple~~ Screw vessel "OTTAWA"  
Built at 6 Lydebank By whom built John Brown & Co. Ltd. Yard No. 654 When built 1950-8.  
Engines made at 6 Lydebank By whom made John Brown & Co. Ltd. Engine No. 654 When made 1950  
Donkey Boilers made at 6 Lydebank By whom made John Brown & Co. Ltd. Boiler No. 654 When made 1950  
Brake Horse Power 6,500 Owners Unitas, Inc. Port belonging to Panama City  
M.N. Power as per Rule 1326 NHP = 1264 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted yes  
Trade for which vessel is intended Oil Tanker

OIL ENGINES, &c. — Type of Engines Doxford Opposed Piston 2 or 4 stroke cycle 2s Single or double acting SA  
Maximum pressure in cylinders 568 lb/sq. in. Diameter of cylinders 725 mm Length of stroke 2250 mm No. of cylinders 5 No. of cranks 5  
Mean Indicated Pressure 89 lb/sq. in. Ahead Firing Order in Cylinders 1, 3, 5, 4, 2 Span of bearings, adjacent to the crank, measured  
Centres of side rods 1410 mm Is there a bearing between each crank yes Revolutions per minute 120  
Flywheel dia. 2362 mm Weight 1000 tons Moment of inertia of flywheel (lbs. in<sup>2</sup> or Kg. cm.<sup>2</sup>) 0.27 ton ft. sec. Means of ignition Capacitor Kind of fuel used Diesel  
Crank Shaft, Solid forged as per Rule approved Crank pin dia. 560 mm Crank webs Mid. length breadth 1040 mm Thickness parallel to axis 315 mm  
Semi built dia. of journals as fitted 560 mm Mid. length thickness 230 mm shrunk Thickness around eye hole 245 mm  
All built  
Flywheel Shaft, diameter as per Rule approved Intermediate Shafts, diameter as fitted 23" Thrust Shaft, diameter at collars as fitted 23"  
Tube Shaft, diameter as per Rule approved Screw Shaft, diameter as fitted 23" Is the tube shaft fitted with a continuous liner yes  
Bronze Liners, thickness in way of bushes as per Rule 1" Thickness between bushes as fitted 1" 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 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 tube shaft yes If so, state type yes Length of bearing in Stern Bush next to and supporting propeller 7'-6"  
Propeller, dia. 18'-0" Pitch 13'-9" No. of blades 3 Material Mn Bronze whether moveable no Total developed surface 122 sq. feet  
Moment of inertia of propeller (lbs. in<sup>2</sup> or Kg. cm.<sup>2</sup>) 7.41 ton ft. sec. Kind of damper, if fitted "Bibby" Detuner  
Method of reversing Engines Direct Is a governor or other arrangement fitted to prevent racing of the engine when detached yes Means of  
lubrication Forced Thickness of cylinder liners 25 mm Are the cylinders fitted with safety valves yes Are the exhaust pipes and silencers water cooled  
lagged with non-conducting material yes 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. 25 Is the sea suction provided with an efficient strainer which can be cleared within the vessel no  
Bilge Pumps worked from the Main Engines, No. 2 Diameter 100 tons/hr. Stroke 20" Can one be overhauled while the other is at work yes  
Pumps connected to the Main Bilge Line (No. and size 2 @ 100 tons/hr. How driven 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 yes  
Ballast Pumps, No. and size 1 @ 100 tons/hr. Power Driven Lubricating Oil Pumps, including spare pump, No. and size 2 @ 10" x 9" x 24"  
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 @ 4"; D.B. cofferdam 1 @ 4" In pump room 1 @ 3"  
In holds, &c. For d. store 2 @ 3" for hold 2 @ 3", for d. 2 aft deep cofferdams 1 @ 4"  
Independent Power Pump Direct Suctions to the engine room bilges, No. and size 2 @ 6", 1 @ 7", 2 @ 2 1/2" (gutter)  
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 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 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 yes  
What pipes pass through the deep tanks none 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 yes worked from yes  
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 3 diameters 12", 10 1/2", 3" stroke 7" driven by Steam  
Auxiliary Air Compressors, No. 1 No. of stages 1 diameters 12" stroke 7" driven by Steam  
Small Auxiliary Air Compressors, No. 1 No. of stages 1 diameters 12" stroke 7" driven by Steam  
What provision is made for first charging the air receivers Steam driven compressors  
Scavenging Air Pumps, No. 1 diameter 1872 mm stroke 1430 mm driven by Main engine  
Auxiliary Engines crank shafts, diameter 4" steam driven No. 2 steam driven 1 Diesel driven Position Port side bottom platform, Flat on port side ER  
Have the auxiliary engines been constructed under special survey yes Is a report sent herewith yes

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AIR RECEIVERS:—Have they been made under survey... *yes* ✓ State No. of report or certificate... *✓*  
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* ✓  
*Whistle*  
Injection Air Receivers, No. *1* ✓ Cubic capacity of each... *30 cu ft.* Internal diameter... *2 1/4"* thickness... *7/16"*  
Seamless, welded or riveted longitudinal joint... *yes* Material... *Steel* Range of tensile strength... *28/32 tons* Working pressure... *250 lb*  
Starting Air Receivers, No. *2* ✓ Total cubic capacity... *600 cu ft.* Internal diameter... *5-4 1/2"* thickness... *1 3/32"*  
Seamless, welded or riveted longitudinal joint... *Welded* Material... *Steel* Range of tensile strength... *28 1/2 tons* Working pressure... *600 lb*  
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... *14.10.48* Receivers... *14.5.48* Separate fuel tanks... *28.2.48*  
(If not, state date of approval) *28.6.48*  
Donkey boilers... *23.6.48* General pumping arrangements... *28.6.48* Pumping arrangements in machinery space... *28.5.48*  
Oil fuel burning arrangements... *26.7.48*  
Have Torsional Vibration characteristics been approved... *yes* ✓ Date of approval... *14.10.48*  
SPARE GEAR.  
Has the spare gear required by the Rules been supplied...  
State the principal additional spare gear supplied...

*John Brown & Company, Limited.*

The foregoing is a correct description.

*Secretary* Manufacturer.

Dates of Survey while building  
During progress of work in shops - - *1949 Jan. 10-21-24-26 Feb. 25 Mar. 2-4 Apr. 20-29 May 16-20-23-30 Jun. 1-3-6-20 Jul. 27 Aug. 17-19-21 Sept. 7-9-14-16-28 Oct. 3-5-10-17-26-28-31 Nov. 4-7-11-16-23-29 Dec. 7-9-16-19-21-29-30 1950 11-16-18-20-23-27-30 Feb. 1-3-8-9-15-20-22-24 Mar. 1-3-8-15-17-22-24-26-28-31 Apr. 7-12-14-17-21-24-26-28 May 1-3-5-8-10-12-15-17-20-22-24-26-28-31 Jun. 2-5-4-12-14-19-21-23-26-28-29 Jul. 1-4-19-20-21-24-26-27-28-31 Aug. 1-2-3-11-14-16-17-18-19-20-21-22-23-24-25-26-27-28-29-30-31*  
During erection on board vessel - - *1950 May 1-4-19-26-29-31 Jun. 2-5-4-12-14-19-21-23-26-28-29 Jul. 1-4-19-20-21-24-26-27-28-31 Aug. 1-2-3-11-14-16-17-18-19-20-21-22-23-24-25-26-27-28-29-30-31*  
Total No. of visits... *123*

Dates of examination of principal parts—Cylinders... *7.3.50 to 5.5.50* Covers... *✓* Pistons... *20.3.50 to 5.5.50* Rods... *20.3.50 to 5.5.50* Connecting rods... *17.3.50 to 21.4.50*  
Crank shaft... *10.5.50* Flywheel shaft... *✓* Thrust shaft... *10.5.50* Intermediate shaft... *26.4.50* Tube shaft... *✓*  
Screw shaft... *26.4.50* Propeller... *21.4.50* Stern tube... *26.4.50* Engine seatings... *15.5.50* Engine holding down bolts... *28.6.50*  
Completion of fitting sea connections... *15.5.50* Completion of pumping arrangements... *14.8.50* Engines tried under working conditions... *18.8.50*  
Crank shaft, material... *Steel* Identification mark... *20666* Flywheel shaft, material... *✓* Identification mark... *✓*  
Thrust shaft, material... *Steel* Identification mark... *S3426* Intermediate shaft, material... *Steel* Identification marks... *S2436*  
Tube shaft, material... *✓* Identification mark... *✓* Screw shaft, material... *Steel* Identification mark... *S2684*  
Identification marks on air receivers... *N2 654 LLOYD'S TEST 950 lb/sq. in. W.P. 600 lb/sq. in. T.D.S. 173-50*

Welded receivers, state Makers' Name... *John Brown & Co. 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... *Chemical. As approved.*  
Is the vessel (not being an oil tanker) fitted for carrying oil as cargo... *Tanker* 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... *"VIKFOSS" Gls Rept N° 75347.*

General Remarks (State quality of workmanship, opinions as to class, &c.) *This machinery has been constructed under special survey in accordance with the approved plans & the requirements of the Rules. The materials & workmanship are good. The machinery has been efficiently installed on board the vessel & tried under full working conditions at sea with satisfactory results & is eligible, in my opinion, to be classed with record of +LMC 8.50 & notations 2DB 180 lb., C.L., 6 in. Eng.*

The amount of Entry Fee... £ *307* : *12* ✓  
*Welded Air Receivers*... £ *16* : *0* ✓  
Special... £ *69* : *16* ✓  
Donkey Boiler Fee... £ *12* : *0* ✓  
*Clarkson Economiser*... £ *22* : *5* ✓  
Travelling Expenses (if any) £ *22* : *5* ✓  
Committee's Minute... *GLASGOW 30 AUG 1950*  
Assigned... *+ LMC 8.50 Oil Engine*

When applied for... *19*

When received... *19*

*T.D. Skilston*  
Engineer Surveyor to Lloyd's Register of Shipping.