

## REPORT ON OIL ENGINE MACHINERY.

No. 13536

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Date of writing Report 1943 When handed in at Local Office 19/6/1943 Port of Belfast  
No. in Survey held at Belfast Date, First Survey 20 Oct. 1942 Last Survey 28 May 1943  
Reg. Book. Number of Visits 70

Single on the Tonnage Triple Screw vessel MV. "NARICA" Tons Gross 8213 Net 4776  
Built at Belfast By whom built Harland & Wolff Ltd Yard No. 1173 When built 1943  
Engines made at Belfast By whom made Harland & Wolff Ltd Engine No. 1158 When made 1943  
Donkey Boilers made at Belfast By whom made Harland & Wolff Ltd Boiler No. 1173 When made 1943  
Brake Horse Power 3600 Owners Anglo Saxon Petroleum Co Ltd Port belonging to London  
Nom. Horse Power as per Rule 502 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes  
Trade for which vessel is intended Ocean going Carrying Petroleum in Bulk

OIL ENGINES, &c. —Type of Engines Harland B & W Airless. 2 or 4 stroke cycle 4 Single or double acting Single  
Maximum pressure in cylinders 700 lpsa Diameter of cylinders 25 1/2" 650 7/8" Length of stroke 14 00 7/8" No. of cylinders 8 No. of cranks 8  
Mean Indicated Pressure 128 lpsa  
Span of bearings, adjacent to the crank, measured from inner edge to inner edge 8 1/4" Is there a bearing between each crank Yes  
Revolutions per minute 120 Flywheel dia. 2218.5 7/8" Weight 2150 Kg Means of ignition Compression Kind of fuel used Diesel Oil  
Crank Shaft, Solid forged dia. of journals as per Rule as approved 460 7/8" Crank pin dia. 460 7/8" Crank webs Mid. length breadth 800 7/8" Thickness parallel to axis 267 7/8"  
as fitted 460 7/8" Mid. length thickness 257 7/8" shrunk Thickness around eyehole 235 7/8"  
Flywheel Shaft, diameter as per Rule as approved Intermediate Shafts, diameter as fitted 19 1/2" Thrust Shaft, diameter at collars as fitted 18 1/4"  
as fitted Tube Shaft, diameter as per Rule as approved Screw Shaft, diameter as fitted 18" Is the (screw) shaft fitted with a continuous liner Yes  
Bronze Liners, thickness in way of bushes as per Rule as approved 7/8" Thickness between bushes as fitted 3/4" 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 No  
If so, state type Length of bearing in Stern Bush next to and supporting propeller 5'-0"  
Propeller, dia. 15'-6" Pitch 12'-0" No. of blades 4 Material Bronze whether moveable Fixed Total developed surface 75 sq. feet  
Method of reversing Engines Air Is a governor or other arrangement fitted to prevent racing of the engine when declutched Yes Means of lubrication Forced Thickness of cylinder liners 4 8 7/8" 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. 4 2 MAIN ENG 2 INDEPENDENT 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 ROTARY EACH 32 tons/hr. Can one be overhauled while the other is at work Yes  
Pumps connected to the Main Bilge Line No. and size 4 { 2 @ 32 tons/hr } 1 @ 40 tons/hr : 1 @ 100 tons/hr  
How driven Main Engine Steam driven  
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 2 100 tons/hr. Power Driven Lubricating Oil Pumps, including spare pump, No. and size 1 MAIN ENG 40 TONS/HR 2 STEAM 80 TONS/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 4 2 @ 3 1/2" 1 @ 4" 1 @ 6" In pump room 2 @ 4"  
In holds, &c. 2 @ 2 1/2"  
Independent Power Pump Direct Suctions to the engine room bilges, No. and size 3 1 @ 4" 1 @ 6" and 1 @ 6" to Air pump (Bagnall only)  
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 Bilge Suct to Deep Cofferdam 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 none 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  
STARTING Main Air Compressors, No. 2 No. of stages 2 diameters 4 1/2 x 8 7/8" 6 1/4" stroke 6" driven by Steam Eng.  
Auxiliary Air Compressors, No. 1 No. of stages 1 diameters 3 1/2 x 8" stroke 6" driven by Diesel Eng.  
Small Auxiliary Air Compressors, No. 1 No. of stages 1 diameters 3 1/2 x 8" stroke 6" driven by Diesel Eng.  
What provision is made for first charging the air receivers As above  
Scavenging Air Pumps, No. 1 diameter 4 1/2" stroke 6" driven by Diesel Eng.  
Auxiliary Engines crank shafts, diameter as per Rule as fitted all steam driven Auxiliary machinery No. 1 except Diesel driven Auxiliary Compressor & Dynamometer  
Have the auxiliary engines been constructed under special survey Yes Is a report sent herewith Yes  
As per Rule 45 SA 46 5 3/4" 48 BHP 2400 30 KW



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.*  
Injection Air Receivers, No... */* Cubic capacity of each... */* Internal diameter... */* thickness... */*  
Seamless, lap welded or riveted longitudinal joint... */* Material... */* Range of tensile strength... */* Working pressure... */*  
Starting Air Receivers, No... *1* Total cubic capacity... *500 cu ft.* Internal diameter... *6'-0 5/16"* thickness... *1"*  
Seamless, lap welded or riveted longitudinal joint... *Riveted* Material... *Steel* Range of tensile strength... *28/32 ksi* Working pressure... *356 lbs*

IS A DONKEY BOILER FITTED *yes (2)* If so, is a report now forwarded... *yes.*  
Is the donkey boiler intended to be used for domestic purposes only... *no steam auxiliaries, fire extinguishing*  
PLANS. Are approved plans forwarded herewith for shafting... *22.4.42. / 16.9.42.* Receivers... *10.9.42.* Separate fuel tank... */*  
Donkey boilers... *25.8.42* General pumping arrangements... *28.10.42* Pumping arrangements in machinery space... *16.2.43*  
Oil fuel burning arrangements... *28.12.42*

#### SPARE GEAR.

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

The foregoing is a correct description,

Manufacturer.

Dates of Survey while building  
During progress of work in shops... *1942 Oct 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30 Dec 3, 28, 30 1943 Jan 1, 5, 11, 13, 14, 15, 18, 19, 21, 25, 27, 28 Feb 1, 2, 4, 6, 7, 8, 12, 21, 25*  
During erection on board vessel... *15, 17, 18, 19, 20, 21, 24, 25, 26, 27, 28*  
Total No. of visits... *70*

Dates of examination of principal parts—Cylinders... *11-13/2/43* Covers... *23.12.42* Pistons... *23.12.42* Rods... *23.2.43* Connecting rods... *15.2.43*  
Crank shaft... *7.1.43* Flywheel shaft... */* Thrust shaft... *7.1.43* Intermediate shafts... *25.1.43* Tube shaft... */*  
Screw shaft... *28.1.43* Propeller... *1.2.43* Stern tube... *1.1.43* Engine seatings... *26.1.43* Engine holding down bolts... *13.5.43*  
Completion of fitting sea connections... *7.2.43* Completion of pumping arrangements... *27.5.43* Engines tried under working conditions... *28.5.43*  
Crank shaft, material... *Steel* Identification mark... *440YDS 101056 RLA* Flywheel shaft, material... */* Identification mark... */*  
Thrust shaft, material... *Steel* Identification mark... *440YDS 101056 RLA* Intermediate shafts, material... *Steel* Identification marks... *440YDS 10418 RS*  
Tube shaft, material... */* Identification mark... */* Screw shaft, material... *Steel* Identification mark... *440YDS 10418 RS*  
Identification marks on air receivers... *HO 244*  

440YDS TEST 556 lbs  
WP 356 lbs  
2. 2. 43 RS.

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 and Chemical extinguishers*  
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... *no* If so, state name of vessel... */*

General Remarks (State quality of workmanship, opinions as to class, &c.)... *This machinery has been constructed under special survey in accordance with the Society's Rules and the approved plans. The materials and workmanship are good. The machinery has been efficiently installed on board the vessel and tried under full working conditions with satisfactory results and is eligible in our opinion to have notation in the Register Book of + LMC 5.43. 2 DB. 180 lbs. TS. CL. Oil engine.*

The amount of Entry Fee ... £ 6 : - :  
Special ... £ 100 : 2 :  
Donkey Boiler Fee... £ 26 : 10 :  
AIR RECEIVERS ... £ 4 : 4 :  
Travelling Expenses (if any) £ : :  
When applied for... *19/6/43*  
When received... *19*

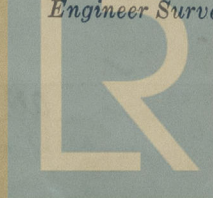
Committee's Minute

Assigned

+ LMC 5.43 2DB-180 lb  
Oil Eng CH

TUES. 6 JUL 1943

Engineer Surveyor to Lloyd's Register of Shipping.



Lloyd's Register  
Foundation