

and give possible.

Rpt. 4b

FOR INSTALLATION SEE LONDON REPORT NO. 142598.

Date of writing report 6.7.59 Received London Port LONDON No. 140638  
Survey held at Stamford, Lincs No. of visits In shops 5 First date 20.5.59 Last date 6.7.59  
On vessel

# FIRST ENTRY REPORT ON INTERNAL COMBUSTION MACHINERY

No. in R.B. Name OIL BARGE "CHARMO". Gross tons  
Owners Charrington, Gardner & Lockett, Ltd. Port of Registry LONDON  
Hull built at Dartford, Kent. By Charrington Gardner Lockett Ltd. Yard No. NC.148 Year Month  
Main Engines made at Stamford By Blackstone & Co. EVS4.P.59E.142 When 1960.4.  
Gearing made at Slough Bucks. By Modern Wheel Drive, Ltd. Eng. No. EVS4.P.59E.141 When 1959.7  
Donkey boilers made at None. By Bir. Nos. When  
Machinery installed at Dartford, Kent. By Cunis & Co., Woolwich. When 1960.  
Particulars of restricted service of ship, if limited for classification A1 OIL BARGE "CARRYING OIL FUEL FP ABOVE 150°F. RIVER THAMES SERVICE.

Particulars of vegetable or similar cargo oil notation, if required

Is ship to be classed for navigation in ice? No.

Is ship intended to carry petroleum in bulk? Yes FP ABOVE 150°F.

Is refrigerating machinery fitted? No.

If so, is it for cargo purposes?

Type of refrigerant

Is the refrigerating machinery compartment isolated from the propelling machinery space?

Is the refrigerated cargo installation intended to be classed?

The following particulars should be given as fully and as clearly as possible. Where the answer is "No" or "None", say so! Ticks and other signs of doubtful meaning are not to be used. Where the wording is not applicable to the installation, a black line may be inserted. If the main engines have been constructed at another port and are covered by a separate report, the particulars given in that report need not be repeated below, but the port and report number should be stated.

No. of main engines 2 No. of propellers 1 Brief description of propulsion system

MAIN RECIPROCATING ENGINES. Licence Name and Type No. Lister-Blackstone, EVSMGR4

No. of cylinders per engine 4 Dia. of cylinders 8 1/2 stroke(s) 11 1/2 2 or 4 stroke cycle 4 Single or double acting Single  
Maximum approved BHP per engine 248 at 600 RPM of engine and 105.6 240 RPM of propeller.

Corresponding MIP 146 p.s.i. (For DA engines give MIP top & bottom)

Maximum cylinder pressure 940 p.s.i.

Machinery numeral

52.8 50x2 = 100

Are the cylinders arranged in Vee or other special formation? No

If so, number of crankshafts per engine

TWO STROKE ENGINES. Is the engine of opposed piston type?

If so, how are upper pistons connected to crankshaft?

Is the exhaust discharged through ports in the cylinders or through valve(s) in the cylinder covers?

No. and type of mechanically driven scavenge pumps or blowers per engine and how driven

No. of exhaust gas driven scavenge blowers per engine

Where exhaust gas driven blowers only are fitted, can the engine operate with one blower out of action?

If a stand-by or emergency pump or blower is fitted, state how driven

No. of scavenge air coolers

Scavenge air pressure at full power

Are scavenge manifold explosion relief valves fitted?

FOUR STROKE ENGINES. Is the engine supercharged? Yes

Are the undersides of the pistons arranged as supercharge pumps? No

No. of exhaust gas driven blowers per engine

No. of supercharge air coolers per engine

Supercharge air pressure 4.5/5.5 psi

Can engine operate without supercharger? Yes

TWO & FOUR STROKE ENGINES--GENERAL. No. of valves per cylinder: Fuel 1 Inlet 1 Exhaust 1

Starting series

Safety 1

Material of cylinder covers Cast iron

Material of piston crowns All alloy

Is the engine equipped to operate on heavy fuel oil? No

Cooling medium for: Cylinders Fresh water Pistons None Fuel valves None

Overall diameter of piston rod for double acting engines

Is the rod fitted with a sleeve? No

Is welded construction employed for: Bedplate? No

Frames? No

Entablature? No

Is the crankcase separated from the underside of pistons? No

Is the engine of crosshead or trunk piston type? Trunk

Total internal volume of crankcase 30 cu.ft.

No. and total area of explosion relief devices 2-22 sq.in.

Are flame guards or traps fitted to relief devices? Yes

Is the crankcase readily accessible? Yes

If not, must the engine be removed for overhaul of bearings, etc?

Is the engine secured directly to the tank top or to a built-up seating?

How is the engine started? Compressed Air

Can the engine be directly reversed? No

If not, how is reversing obtained? M.W.D.2.5/1. REV/RED.2MWR.

Size 3 Gearbox No.12288

Has the engine been tested working in the shop?

How long at full power?

CRANK & FLYWHEEL SHAFTING. Date of approval of torsional vibration characteristics of the propelling machinery system 1.6.59

Secy. letter

State barred speed range(s), if imposed

for working propeller

For spare propeller

Is a governor fitted? Yes

Is a torsional vibration damper or detuner fitted to the shafting? No

Where positioned?

Type

No. of main bearings 6

Are main bearings of ball or roller type? No

Distance between inner edges of bearings in way of crank(s) 10.1/16"

Distance between centre lines of side cranks or eccentrics of opposed piston engines

Crankshaft type: Built, semi-built, solid. (State which) Solid

Diameter of journals 6 3/4"

Diameter of crankpins

Centre 6 3/4"

Side

Breadth of webs at mid-throw 7 1/4"

Axial thickness of webs 2.25/32"

If shrunk, radial thickness around eyeholes

Are dowel pins fitted?

Crankshaft material Journals

Pins EN8

Minimum

Webs Steel

Approved

tons

per

sq.in.

Diameter of flywheel 40"

Weight 2180 lbs

Are balance weights fitted? No

Total weight

Radius of gyration

Diameter of flywheel shaft 6 3/4"

Material EN8 Steel

Minimum approved tensile strength 40 tons/sq.in.

Flywheel shaft: separate, integral with crankshaft, integral with thrustshaft. (State which) Integral with crankshaft.



No. of sets of turbines ..... Open or closed cycle ..... BHP per set ..... at ..... RPM of output shaft .....

How is drive transmitted to propeller shaft? .....

ARRANGEMENT OF TURBINES. HP drives ..... at ..... RPM HP gas inlet temperature ..... pressure  
(A small diagram should be attached  
showing gas cycle.)

IP drives ..... at ..... RPM IP gas inlet temperature ..... pressure

LP drives ..... at ..... RPM LP gas inlet temperature ..... pressure

No. of air compressors per set ..... Centrifugal or axial flow type? ..... Material of turbine blades ..... Material of  
compressor blades ..... No. of air coolers per set ..... No. of heat exchangers per set ..... How are turbines started? .....

How is reversing effected? ..... Are the turbines operated in conjunction with free piston gas generators? .....

Total No. of free piston gas generators ..... Diameter of working pistons ..... Diameter of compressor pistons ..... No. of double strokes per  
minute at full power ..... Gas delivery pressure ..... Gas delivery temperature ..... Have the turbines and attached equipment been tested working  
in the shop? ..... How long at full power? .....

No. of generators..... KW per generator..... at..... RPM AC or DC?..... Position.....

No. of propulsion motors..... SHP per motor..... at..... RPM Position.....

How is power obtained for excitation of generators?..... Motors?.....

Is gearing of single or double helical type?..... If single, position of gear thrust bearing..... Is gearing of epicyclic type?.....

PCD of pinions: First reduction..... Second reduction..... PCD of wheels: First reduction..... Main.....

Material of pinions..... Tensile strength..... Material of wheel rims..... Tensile strength.....

Are gear teeth surface hardened?..... How are teeth finished?..... Diameter of pinion journals..... Wheel shaft.....

journals..... Are the wheels of welded construction?..... Is gearcase of welded construction?..... Has the wheel/gearcase been heat treated on completion.....

of welding?..... Where is the propeller thrust bearing located?..... Are gear bearings of ball or roller type?.....

description and, for clutches, state how operated Rubber bonded flexible coupling between engines and gearbox

Can the main engine be used for purposes other than propulsion when declutched? Yes If so, what? Cargo pumping

Shaft separate or integral with crank or wheel shaft?..... Diameter of intermediate shaft..... Material.....

Minimum approved tensile strength..... Diameter of screwshaft cone at large end..... Is screwshaft fitted with a continuous liner?

Diameter of tube shaft. (*If these are separate shafts*)..... Is tube shaft fitted with a continuous liner in way of stern tube..... Thickness of screw/tube shaft liner.....

bearings..... Thickness between bearings..... Material of screw/tube shaft..... Minimum approved tensile strength.....

Is an approved oil gland fitted?..... If so, state type..... Length of bearing next to and supporting propeller.....

Material of bearing..... In multiple screw vessels is the liner between stern tube and A bracket continuous?..... If not, is the exposed length of shafting between.....

liners readily visible in dry dock?.....

No. of blades..... Blade thickness at top of root fillet..... Blade material..... Moment of inertia of dry propeller.....

If propeller is of special design, state type..... Is propeller of reversible pitch type?..... If so, is it of approved design?.....

State method of control..... Material of spare propeller..... Moment of inertia.....

No. of independently driven air compressors. (State capacity, prime mover, position in ship, and Port and No. of certificate) \_\_\_\_\_

\_\_\_\_\_

No. of starting air receivers. (Main and Aux. State capacity of each, position in ship and Port and No. of Certificate) \_\_\_\_\_

How are receivers first charged?..... Maximum working pressure of starting air system..... Are the safety devices in accordance with the Rules?..... Has the starting of the main engines been tested and found satisfactory?.....

OIL FUEL TANKS. No. and position of oil fuel settling or service tanks not forming part of hull structure.....

[illegible]

BILGE SUCTIONS. No. and size in each hold, deep tank or pump room.....

No. and size connected to main bilge line in main engine room..... In tunnel.....

In aux. engine room.....	Size and position of direct bilge suction in machinery spaces.....
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Size and position of emergency bilge suction in machinery spaces

Is the bilge or ballast system fitted with means for separating oily water on the overboard discharge side?..... Do the piping arrangements comply with the Rules including special requirements for ships carrying petroleum in bulk, cargo oil or classed for navigation in ice? (*strike out words not applicable*). .....

[illegible]

Is electric current used for essential services at sea? ..... If so, state the minimum No. and capacity of generators required in order that the ship may operate

at sea..... Is an electric generator driven by Main Engine?

STEAM INSTALLATION. No. of donkey boilers burning oil fuel..... W.P. .... Type .....

Is a superheater fitted?..... Are these boilers also heated by exhaust gas?..... No. of donkey boilers heated by exhaust gas only?..... W.P. ....

Type \_\_\_\_\_ Position \_\_\_\_\_ Can the exhaust heated boilers deliver steam directly to the engine? \_\_\_\_\_

the steam range or do they operate only as economisers in conjunction with oil fired boilers? ..... Port and No. of report on donkey

boilers.....	Is steam essential for operation of the ship at sea?.....	Are any steam pipes over 3 ins. bore?.....	If so, what is the
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material?	For oil fired boilers is the arrangement of pipes, valves, controls, etc., in accordance with the Rules?.....	No. of oil burning pressure
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units..... No. of steam condensers..... No. of Evaporators.....

STEERING GEAR. (State No. and Type of Steam Engines, Electric Motors, Hydraulic Pumps and other particulars).....

Have the Rule Requirements for fire extinguishing arrangements been complied with?	Brief description of arrangements

Has the spare gear required by the Rules been supplied?..... Has all the machinery been tried under full working conditions and found satisfactory?..... Date and duration of fu

power sea trials of main engines..... Does this machinery installation contain any features of a novel or experimental nature? (Give particulars)

The foregoing description of the main engine and installation is correct and the particulars are as approved for torsional vibration characteristics (~~strike out words not applicable~~).



GENERAL REMARKS

State if the machinery has been constructed and/or installed under special survey in accordance with the Rules, approved plans and Secretary's letters. State quality of materials and workmanship and give recommendations for classification, including any special notation to be assigned. Where existing machinery is submitted for classification the circumstances should be explained as fully as possible.

These engines, BM.90354 and 5, have been built under special survey from materials manufactured under the supervision of Surveyors to the Society in accordance with Approved Plans and the Rules of the Society. Workmanship throughout is satisfactory. In my opinion they are eligible for installation in the classed vessel.

*W. Waddle*

Engine Surveyor to Lloyd's Register of Shipping.  
W. WADDLE.

PARTICULARS OF IDENTIFICATION MARKS ((Including Port of origin) of important Forgings and Castings. (Copies of certificates should be forwarded with report.)

RODS Port V64; 4463K362-K322-K320. Star'd. X24; V64; 4463K358; BOX139 covered by hatch certificates BHAM.C29132; C35752; F/752. LDS.C30722; C30251; C30243; C30717. WW. LON.20.5.59  
Port 945.721/276. AE75HKS  
CRANKSHAFT OR ROTORSHAFT Stbd.945.716/271. AUG. 30.1.59 W.W. LON. 205.59

FLYWHEEL SHAFT

THRUSTSHAFT

GEARING

INTERMEDIATE SHAFTS

SCREW AND TUBE SHAFTS

PROPELLERS

OTHER IMPORTANT ITEMS Cylinder blocks with liners and heads:- LLOYD'S TEST 100lbs. WW.LON.20.5.59

Is the installation a duplicate of a previous case?

If so, state name of vessel

Date of approval of plans for crankshaft 1.6.59

Straight shafting

Gearing

Clutch

Separate oil fuel tanks

Pumping arrangements

Oil fuel arrangements

Cargo oil pumping arrangements

Air receivers

Donkey boilers

Dates of examination of principal parts:-

Fitting of stern tube

Fitting of propeller

Completion of sea connections

Alignment of crankshaft in main bearings

Engine chocks & bolts

Alignment of gearing

Alignment of straight shafting

Testing of pumping arrangements

Oil fuel lines

Donkey boiler supports

Steering machinery

Windlass

Date of Committee

FRIDAY 17 JUN 1960

Special Survey Fee

£51.5.0d.

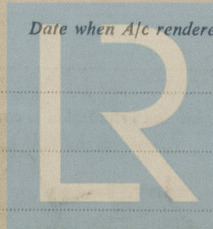
Decision

See Rpt. 1

Expenses

£10.2.6d.

Date when A/c rendered



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