

Rpt. 4b

Date of writing report 12.2.61 Received London Port LONDON No. 144310
 Survey held at Stamford, Lincs. No. of visits In shops 4 First date 19.12.60 Last date 9.2.61
 On vessel

FIRST ENTRY REPORT ON INTERNAL COMBUSTION MACHINERY

No. in R.B. Name Gross tons

Owners Managers Port of Registry Year Month

Hull built at Appledore, Devon By P.K.Harris & Sons Ltd. Yard No. 133 When

Main Engines made at Stamford By Blackstone & Co.Ltd. Eng. No. ERS6P60L358 When 1961-2.

Gearing made at By

Donkey boilers made at By Blr. Nos. When

Machinery installed at By When

Particulars of restricted service of ship, if limited for classification

Particulars of vegetable or similar cargo oil notation, if required

Is ship to be classed for navigation in ice? Is ship intended to carry petroleum in bulk?

Is refrigerating machinery fitted? 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 No. of propellers Brief description of propulsion system SUPERCHARGED

MAIN RECIPROCATING ENGINES. Licence Name and Type No. Lister-Blackstone ERS6 type diesel engine.

No. of cylinders per engine 6 Dia. of cylinders 8 3/4 stroke(s) 11 1/2 2 or 4 stroke cycle 4 Single or double acting Single

Maximum approved BHP per engine 495 at 750 RPM of engine and 263 RPM of propeller.

Corresponding MIP 146 psi. (For DA engines give MIP top & bottom) Maximum cylinder pressure 940 psi. Machinery numeral 99

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

One No. of supercharge air coolers per engine None Supercharge air pressure 4 1/2 / 5 1/2 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 2 in Safety 1

Material of cylinder covers Cast Iron Material of piston crowns Alum. Alloy Is the engine equipped to operate on heavy fuel oil? No

Cooling medium for :-Cylinders Water Pistons None Fuel valves None Overall diameter of piston rod for double acting engines -

Is the rod fitted with a sleeve? - 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 44 cu.ft. No. and total area of explosion relief

devices 4-44 sq. ins. 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? Reverse/Reduction gear.

Has the engine been tested working in the shop? Yes How long at full power? 4 hour and 1 hour on 110% load.

CRANK & FLYWHEEL SHAFTING. Date of approval of torsional vibration characteristics of the propelling machinery system Sec: 2.12.60 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? Yes

Where positioned? Crankshaft ford. end. Type Atlas hydraulic No. of main bearings 8 Are main bearings of ball or roller

type? No Distance between inner edges of bearings in way of crank(s) 10 1/2 / 16" Distance between centre lines of side cranks or eccentrics of opposed piston engines -

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

Diameter of journals 6 3/4 Diameter of crankpins Centre 6 1/8 Side Breadth of webs at mid-throw 7 3/4 Axial thickness of webs 2 25/32

If shrunk, radial thickness around eyeholes - Are dowel pins fitted? - Crankshaft material Journals EN8 steel Approved 40 tons/sq. in.

Webbs Tensile strength

Diameter of flywheel 38" Weight 1860 lbs. Are balance weights fitted? Yes Total weight 304 lbs. Radius of gyration 0.706ft.

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.

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MAIN GAS TURBINES. Name and Type No.....

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?.....

ELECTRIC PROPULSION (Reciprocating engines or gas turbines. Electrical particulars to be reported on Form 4d.)

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?.....

REDUCTION GEARING (Reciprocating engines or gas turbines. A small line sketch should be attached showing arrangement of gearing.)

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?.....

CLUTCHES, FLEXIBLE COUPLINGS, ETC. If a clutch or other flexible connection is fitted between engine/turbine and gearing or between engine and line shafting give brief description and, for clutches, state how operated.....

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

STRAIGHT SHAFTING. Diameter of thrustshaft..... Material..... Minimum approved tensile strength.....
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 at 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?.....

PROPELLER. Diameter of propeller..... Pitch..... Built up or solid..... Total developed surface.....
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.....

AIR COMPRESSORS & RECEIVERS. No. of main engine driven compressors per engine..... Can they be declutched?.....

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

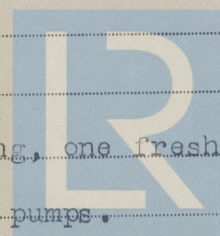
No. of starting air receivers. (Main and Aux. State capacity of each, position in ship and Port and No. of Certificate).....

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?.....

COOLERS. No. of main engine fresh water coolers..... 1 Serck
No. of main engine lubricating oil coolers..... 1 Serck
LL7988 LL 7542.

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

MAIN ENGINE DRIVEN PUMPS (No. and Purpose).....
and raw No. A15260..... One each pressure & scavenge lub. oil pumps.
(Cert. N.T.M.C. 32951)



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Lloyd's Register
Foundation

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.

BM. 90615. This engine has been built under special survey from materials manufactured under the supervision of Surveyors to this Society, in accordance with approved plans and the Rules of this Society. Workmanship is good throughout.

In my opinion it is eligible for installation in a Classed Vessel.

W. Waddle

W. WADDLE.

Engine Surveyor to Lloyd's Register of Shipping.

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

RODS 40404K702, 40404K702, 40404K708, 40404K708, 40404K700 & BCX178 WW. LON. 22.12.60.

Batch certificates C37901, C37902. LDS. and C.47086 BHM.

CRANKSHAFT OR ROTORSHAFT C.275: 948/774. HKS. AUG. 2.12.60. WW.LON. 19.12.60.

FLYWHEEL SHAFT

THRUSTSHAFT

GEARING

INTERMEDIATE SHAFTS

SCREW AND TUBE SHAFTS

PROPELLERS

OTHER IMPORTANT ITEMS Cylinder block with liners and heads:- Lloyds test 100lb. WW.LON. 19.12.60.

Is the installation a duplicate of a previous case?

If so, state name of vessel

Date of approval of plans for crankshaft 2.12.60.

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 29 SEP 1961

Special Survey Fee

£42.10.0.

Decision

Supply 8848

36

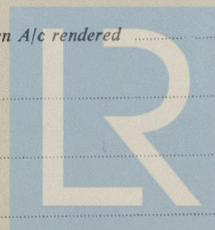
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Expenses

£4. 5. 0.

Date when A/c rendered

6 MAR 1961



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