

Rpt. 4b

Date of writing report 3.7.61. Received London _____ Port PLYMOUTH No. 8848
 Survey held at APPLEDORE No. of visits 14. In shops _____ First date 16.2.61. Last date 29.6.61.
 On vessel _____

FIRST ENTRY REPORT ON INTERNAL COMBUSTION MACHINERY

No. in R.B. 94362 Name "ALICE" Gross tons 37.92
 Owners The Admiralty Managers _____ Port of Registry Stated based at Portsmouth
 Hull built at Appledore By P.K. Harris & Sons Ltd. Yard No. 133 When 1961
 Main Engines made at Stamford By Lister Blackstone Ltd. Eng. No. ERS6P60L358 When 1961 2
 Gearing made at Slough By Modern Wheen Drive Ltd.
 Donkey boilers made at None By _____ Blr. Nos. _____ When _____
 Machinery installed at Appledore By P. K. Harris & Sons Ltd. When 1961
 Particulars of restricted service of ship, if limited for classification Harbour & Estuary duties.
 Particulars of vegetable or similar cargo oil notation, if required None
 Is ship to be classed for navigation in ice? No Is ship intended to carry petroleum in bulk? No
 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 One No. of propellers One Brief description of propulsion system Diesel engine driving thro' Nodal coupling to M.W.D. Reverse/Reduction gears(2.848:1) to screwshaft

MAIN RECIPROCATING ENGINES. Licence Name and Type No. Lister ERSMGR6
 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 264 RPM of propeller.
 Corresponding MIP 146 p.s.i. (For DA engines give MIP top & bottom) Maximum cylinder pressure 800 p.s.i. 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 - Supercharge air pressure approx. 5 psi Can engine operate without supercharger? Yes

TWO & FOUR STROKE ENGINES—GENERAL. No. of valves per cylinder: Fuel One Inlet One Exhaust One Starting One Safety One
 Material of cylinder covers _____ Material of piston crowns _____ Is the engine equipped to operate on heavy fuel oil? No
 Cooling medium for :—Cylinders Fresh Water Pistons _____ Fuel valves _____ 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? _____ Is the engine of crosshead or trunk piston type? _____ Total internal volume of crankcase _____ No. and total area of explosion relief devices _____ 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? No Is the engine secured directly to the tank top or to a built-up seating? 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 box
 Has the engine been tested working in the shop? Yes How long at full power? _____

CRANK & FLYWHEEL SHAFTING. Date of approval of torsional vibration characteristics of the propelling machinery system _____ State barred speed range(s), if imposed for working propeller _____ For spare propeller _____ Is a governor fitted? _____ Is a torsional vibration damper or detuner fitted to the shafting? _____
 Where positioned? _____ Type _____ No. of main bearings _____ Are main bearings of ball or roller type? _____ Distance between inner edges of bearings in way of crank(s) _____ Distance between centre lines of side cranks or eccentrics of opposed piston engines _____
 Crankshaft type: Built, semi-built, solid. (State which) _____

Diameter of journals _____ Diameter of crankpins _____ Centre _____ Breadth of webs at mid-throw _____ Axial thickness of webs _____ Side _____ Pins _____ Minimum _____
 If shrunk, radial thickness around eyeholes _____ Are dowel pins fitted? _____ Crankshaft material Journals _____ Approved _____ Webs _____ Tensile strength _____
 Diameter of flywheel _____ Weight _____ Are balance weights fitted? _____ Total weight _____ Radius of gyration _____
 Diameter of flywheel shaft _____ Material _____ Minimum approved tensile strength _____
 Flywheel shaft: separate, integral with crankshaft, integral with thrustshaft. (State which) _____

See London Rpt. 4b No. 144310.



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. 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.) See Lon. Cert. MWD.2271.

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. Nodal Damper Coupling.

Can the main engine be used for purposes other than propulsion when declutched? No. If so, what?

STRAIGHT SHAFTING. Diameter of thrust shaft. Material. Minimum approved tensile strength.

Shaft separate or integral with crank or wheel shaft? Separate. Diameter of intermediate shaft 5 1/8" & 5 1/2" in Material Steel. way of bearings.

Minimum approved tensile strength. Diameter of screw shaft cone at large end 6 1/8". Is screw shaft fitted with a continuous liner? No.

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 Steel. Minimum approved tensile strength.

Is an approved oil gland fitted? Yes. If so, state type Newark. Length of bearing next to and supporting propeller 24 1/2".

Material of bearing G.M. & W.M. Lined. In multiple core 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 6' 2". Pitch 4' 3". Built up or solid Solid. Total developed surface 29.55 sq. ft.

No. of blades 4. Blade thickness at top of root fillet 3 1/2". Blade material Bronze. Moment of inertia of dry propeller 2550 lbs/ft^2.

If propeller is of special design, state type No. Is propeller of reversible pitch type? No. If so, is it of approved design?

State method of control. Material of spare propeller Bronze. Moment of inertia 2550 lbs/ft^2.

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

No. of independently driven air compressors. (State capacity, prime mover, position in ship, and Port and No. of certificate) One @ 8 cu. ft./min. Lister Aux.

Motor FR2 MA, at port aft end of manoeuvring platform. Sou. D16592 & Sou. D.16738.

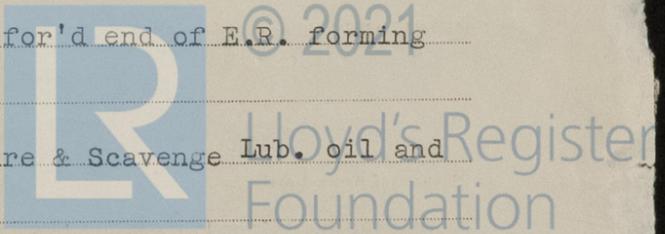
No. of starting air receivers. (Main and Aux. State capacity of each, position in ship and Port and No. of Certificate) 2 Main @ 11.23 cu. ft. each, port aft end manoeuvring platform (one above the other lying fore & aft) Mch. C.4878.

How are receivers first charged? Hand started aux. motor. Maximum working pressure of starting air system 350 p.s.i. Are the safety devices in accordance with the Rules? Yes. Has the starting of the main engines been tested and found satisfactory? Yes.

COOLERS. No. of main engine fresh water coolers One. No. of main engine lubricating oil coolers One.

OIL FUEL TANKS. No. and position of oil fuel settling or service tanks not forming part of hull structure. One at fore'd end of E.R. forming part of Engine casing.

MAIN ENGINE DRIVEN PUMPS (No. and Purpose) S.W. & F.W. circulating, Pressure & Scavenge Lub. oil and belt driven - one bilge (13 TPH) and one gear box L.O. Standby.



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INDEPENDENT PUMPS Name below essential pumps, state position and how driven. Give capacity of bilge pumps.	Service for which each pump is connected to be marked thus X															
	SUCTION								DELIVERY							
	Bilge Main	Bilge Direct	Ballast Main	Oil Fuel	Fresh Water Cooling	Sea	Feed Tanks	Lub. Oil	Boiler Feed	Salt Water Cooling	Fresh Water Cooling	Oil Fuel Tanks	Fire Main	Lub. Oil	Piston Cooling	Over Bd.
Bilge & Ballast (15 TPH) ssf bottom platform Lister FR2MA Diesel	X	X	X			X				X			X			X
F.O. Transfer (3 TPH) on E.R. for 'd bulkhd. (ED)				X								X				

BILGE SUCTIONS. No. and size in each ~~hold, deep tank or pump room~~ From for'd (Semi-rotary to Chain Locker $\times 1\frac{1}{2}$ " bore)
 For'd Accom. one @ 2"; Aft Accm. one @ 2"
 No. and size connected to main bilge line in main engine room one @ 2"
~~In aux. engine room~~ Size and position of direct bilge suction in machinery spaces one @ 2"
 aft end ss of C/L Size and position of emergency bilge suction in machinery spaces one @ 2" aft end ps of C/L
 Is the bilge or ballast system fitted with means for separating oily water on the overboard discharge side? No 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? Yes

STEAM & OIL ENGINE AUXILIARIES

Position of each	Type	Made by	Port and No. of Rpt. or Cert.	Driven Machinery (For electric generators, state output)
Port Side ER mid length	FR2 MA	Lister	Brs. SC. 9507 ²⁰⁴ X	10 KW Generator & 8cu.ft/min Hamworthy L2L1 Air Comp.
Starbd. Side ER mid length	FR2 MA	Lister	Brs. SC. 9539 ²⁰⁴ X	10 KW Generator & Hamworthy 15 T/h bilge & ballast pump.

Is electric current used for essential services at sea? Yes If so, state the minimum No. and capacity of generators required in order that the ship may operate at sea One @ 10 KW Is an electric generator driven by Main Engine? No

STEAM INSTALLATION. No. of donkey boilers burning oil fuel W.P. Type
 Position
 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 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 their material?
 For oil fired boilers is the arrangement of pipes, valves, controls, etc., in accordance with the Rules? No. of oil burning pressure units No. of steam condensers No. of Evaporators

STEERING GEAR. (State No. and Type of Steam Engines, Electric Motors, Hydraulic Pumps and other particulars) One - Vickers Armstrong, Hand operated hydraulic gear with emergency tiller

Have the Rule Requirements for fire extinguishing arrangements been complied with? Yes Brief description of arrangements 2" Hydrant ssf in ER with Jet/Spray nozzle & hose, one 2 gall. Foam Ext. on for'd bulkhd. and one 2 gall. Foam Extinguisher on aft bulkhd. & one Pyrene @ Switchbd. and one sand box of 2.35 cu.f.t. capacity with scoop.
 Has the spare gear required by the Rules been supplied? Yes Has all the machinery been tried under full working conditions and found satisfactory? Yes Date and duration of full power sea trials of main engines 6.4.61. 14 hours. Does this machinery installation contain any features of a novel or experimental nature? (Give particulars) No

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).
 Lloyd's Register Foundation
 Builder
 0152 2/2

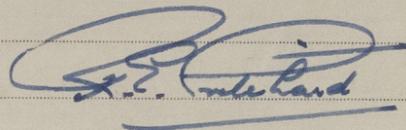
GENERAL REMARKS

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.

This machinery has been installed under Special Survey in accordance with the Rules, approved plans and Secretary's letters.

The materials and workmanship are good and on completion of the installation on board, full power trials at sea were carried out with satisfactory results.

In my opinion this machinery is eligible to be classed + L.M.C. 6,61 and to have the record of T.S.(OG) 6,61.



Engineer Surveyor to Lloyd's Register of Shipping.

(R. E. Pritchard)

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

RODS Lon. rpt.

CRANKSHAFT OR ROTORSHAFT Lon. rpt.

FLYWHEEL SHAFT Lon. rpt.

THRUSTSHAFT Lon. rpt.

GEARING Lon. rpt.

INTERMEDIATE SHAFTS LR. 2598 31.1.61. Mch. Cert. C.5019

SCREW AND TUBE SHAFTS LR. 2599 L.V.H. 21.2.61. Mch. Cert. C. 5019

PROPELLERS Lloyd's 8480 Cff. 20.2.61. R.E.M. Cff. Cert. F.8480.

OTHER IMPORTANT ITEMS

Is the installation a duplicate of a previous case? No If so, state name of vessel --

Date of approval of plans for crankshaft Lon. Straight shafting Lon. Gearing Lon. Clutch Lon.

Separate oil fuel tanks -- Pumping arrangements 30.11.60. Oil fuel arrangements 14.11.60.

Cargo oil pumping arrangements -- Air receivers -- Donkey boilers --

Dates of examination of principal parts:—

Fitting of stern tube 23.2.61. Fitting of propeller 1.3.61. Completion of sea connections 6.3.61. Alignment of crankshaft in main bearings 16.3.61.

Engine checks & bolts 16.3.61. Alignment of gearing 16.3.61. Alignment of straight shafting 16.3.61. Testing of pumping arrangements 11.4.61.

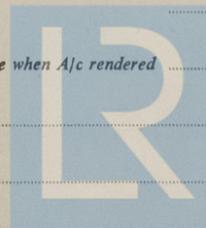
Oil fuel lines 11.4.61. Donkey boiler supports --- Steering machinery 6.4.61. Windlass 6.4.61.

Date of Committee FRIDAY 29 SEP 1961 Special Survey Fee £ 25. 0. 0.

Decision + L M C E S } 6.61
TS(OG)

Expenses £ 10. 0. 0.

Date when A/c rendered 11.8.61.



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