

Rpt. 4b

Date of writing report ... Received London ... Port BIRMINGHAM ... No. 731 ... In shops 2 ... First date 27/3/62 ... Last date 7/5/62 ... Survey held at Shrewsbury ... No. of visits ... On vessel

FIRST ENTRY REPORT ON INTERNAL COMBUSTION MACHINERY

No. in R.B. ... Name Waterways Transport. ... Owners East Pakistan Inland ... Managers ... Port of Registry ... Year Month ... Hull built at ... By Macvanska Mitrovica "Sava" ... Yard No. ... When ... Main Engines made at Shrewsbury. ... By Rolls-Royce Limited. ... Eng. Nos 642600 MOD. 2A/5 ... When 62 5 ... Gearing made at Cleveland ... By Capitol Gears Inc. ... Gear Nos 222-R & 599 ... When 62 3 ... Aux./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 ... If ship is to be classed for navigation in ice, state whether Class 1, 2 or 3 ... Is ship an oil tanker? ... 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 should 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 all other relevant particulars must be given and the port and report number should be stated.

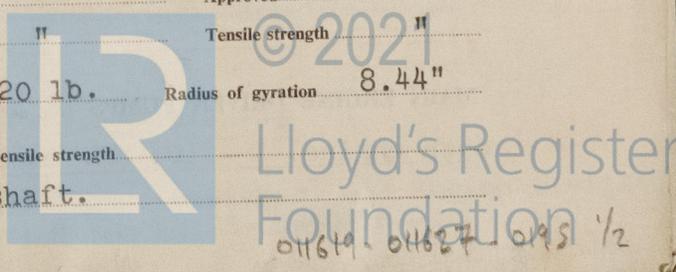
No. of main engines 2 ... No. of propellers 2 ... Brief description of propulsion system 2 Oil Engines driving through reverse reduction gearboxes to 2 screwshafts.

MAIN RECIPROCATING ENGINES. Licence Name and Type No. Rolls-Royce C6/TFL type 642600 MOD. 2A & 2B ... No. of cylinders per engine 6 ... Dia. of cylinders 5.125" ... stroke(s) 6" ... 2 or 4 stroke cycle 4SC ... Single or double acting SA ... Maximum BHP per engine approved for this installation 246 ... at 1800 RPM of engine and 882 RPM of propeller. ... Corresponding MIP 184 lbs/sq" (For DA engines give MIP top & bottom) ... Maximum cylinder pressure 1560 lbs/sq" ... 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?

TWO AND 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 1 ... No. of supercharge air coolers per engine 1 ... Supercharge air pressure 9 lbs/sq" ... Can engine operate without supercharger? Yes ... No. of valves per cylinder: Fuel 1 ... Inlet 2 ... Exhaust 2 ... Starting - ... Safety - ... Material of cylinder covers Cast Iron ... Material of piston crowns Aluminium Alloy ... Is the engine equipped to operate on heavy fuel oil? No ... Cooling medium for: Cylinders FW ... 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? No ... Is the engine of crosshead or trunk piston type? Trunk ... Total internal volume of crankcase Less than 20 cu.ft. ... No. and total area of explosion relief devices None ... Are flame guards or traps fitted to relief devices? - ... Is the crankcase readily accessible? No ... If not, must the engine be removed for overhaul of bearings, etc.? Yes ... Is the engine secured directly to the tank top or to a built-up seating? ... How is the engine started? Electric CAV type. ... Can the engine be reversed? No ... If not, how is reversing obtained? Clutches in reverse reduction gearboxes. ... Has the engine been tested working in the shop? Yes ... How long at full power? 4 hours + 1 hour overload.

CRANK & FLYWHEEL SHAFTING. Date of approval of torsional vibration characteristics of the propelling machinery system 30/4/62 ... State barred speed range(s), if imposed for working propeller Below 600 RPM ... For spare propeller - ... Is a governor fitted? Yes ... Is a torsional vibration damper or detuner fitted to the shafting? Yes ... Where positioned? For'd end of engine. Type Holset Viscous. ... No. of main bearings 7 ... Are main bearings of ball or roller type? No ... Distance between inner edges of bearings in way of crank(s) 4.875 ... 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 3.9" ... Diameter of crankpins Centre 3.25" ... Breadth of webs at mid-throw 5.25" ... Axial thickness of webs 1.163" ... Side - ... Pins EN.19 ... Minimum 55 tons/sq.in. ... If shrunk, radial thickness around eyeholes ... Are dowel pins fitted? ... Crankshaft material: Journals - ... Approved - ... Webs - ... Tensile strength - ... Diameter of flywheel 22.07" ... Weight 120 lb. ... Are balance weights fitted? No ... Total weight 120 lb. ... Radius of gyration 8.44" ... Diameter of flywheel shaft ... Material ... Minimum approved tensile strength ... Flywheel shaft: separate, integral with crankshaft, integral with thrustshaft. (State which) Integral with crankshaft.



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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 have been built under Special Survey in accordance with the Rules, the approved plans and the Secretary's letters. Workmanship is considered satisfactory and it is submitted that these engines are eligible for the notation + LMC subject to the engines not being run continuously below 600 RPM.

J. E. Larmont
Engineer 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 LS.635, LS.745, LS.630, LS.696, LS.732, LS.557, LS.563, LS.538, LS.649, LS.614, LS.613, LS.628.

CRANKSHAFT ~~XXXXXXXXXXXX~~ R.5579 & R.5541

FLYWHEEL SHAFT

THRUSTSHAFT

GEARING

INTERMEDIATE SHAFTS

SCREW AND TUBE SHAFTS

PROPELLERS

OTHER IMPORTANT ITEMS

Is the installation a duplicate of a previous case? If so, state name of vessel

Date of approval of plans for crankshaft Straight shafting Gearing Clutch

Separate oil fuel tanks Pumping arrangements Oil fuel arrangements

Cargo oil pumping arrangements Air receivers Aux./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 checks & bolts Alignment of gearing Alignment of straight shafting Testing of pumping arrangements

Oil fuel lines Donkey boiler supports Steering machinery Windlass

Date of Committee TUESDAY 14 JAN 1964 Special Survey Fee £47. 10. 0d.

Decision Su Rjka 1891 Expenses £3. 15. 0d.

