

Rpt. 4b

Date of writing report 17.9.1963 Received London ... Port Rijeka No. 1891
Survey held at Macvanska Mitrovica No. of visits In shops 8 First date 16.11.1962 Last date 19.8.1963

FIRST ENTRY REPORT ON INTERNAL COMBUSTION MACHINERY

No. in R.B. Name "SITARA" Gross tons 87.50
East Pakistan Inland Water
Owners Transport Authority Managers Port of Registry Narayanganj
Mačvanska Mitrovica By Brodogradiliste "SAVA" Yard No. 97 Year Month 1963 8
Hull built at Shrewsbury By Rolls-Royce Limited Eng. No. 642600 Mod-2B-5 When 1962 5
Main Engines made at Claveland By Capitol Gear Ins 222R-&599 1962 3
Donkey boilers made at Machinery installed at Macvanska Mitrovica By Brodogradiliste "SAVA" When 1963

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 2 No. of propellers 2 Brief description of propulsion system 2 Oil engine driving through reverse reduction gearbox 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 4 SC Single or double acting SA
Maximum approved BHP per engine 246 at 1800 RPM of engine and 882 RPM of propeller.

Corresponding MIP 1841lb/sq.in. (For DA engines give MIP top & bottom) Maximum cylinder pressure 1560 lb/sq.in. 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 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 1 No. of supercharge air coolers per engine 1 Supercharge air pressure 9lb/sq.in. Can engine operate without supercharger? yes

TWO & FOUR STROKE ENGINES-GENERAL. 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? built up seating How is the engine started? Electric CAV type

Can the engine be directly reversed? no If not, how is reversing obtained? clutches in reverse reduction gear-boxes
Has the engine been tested working in the shop? yes How long at full power? 4 hour + 1 hour overload

CRANK & FLYWHEEL SHAFTING. Date of approval of torsional vibration characteristics of the propelling machinery system below 600 RPM 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? Fwd. end of engine Type Holest 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 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 " Tensile strength " Webs " Minimum 2,44"
Diameter of flywheel 2207" Weight 120lbs Are balance weights fitted? no Total weight 120lbs Radius of gyration

Diameter of flywheel shaft Material Minimum approved tensile strength
Flywheel shaft: separate, integral with crankshaft, integral with thrustshaft. (State which) Integral with crankshaft



2/1/64

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 _____
 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 _____
 minute at full power _____ Gas delivery pressure _____ Gas delivery temperature _____ Have the turbines and attached equipment been tested work _____
 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? no 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

Oil operated disc type incorporated in gear-box.

Can the main engine be used for purposes other than propulsion when declutched? no 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 2.756" Material MF. Steel
 Minimum approved tensile strength 28 tons/sq. in. Diameter of screwshaft cone at large end 3.197" Is screwshaft 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 _____
 bearings 4.095" Thickness between bearings 3.858" Material of screw/tube shaft Alloy steel special EN57 grade stainless Minimum approved tensile strength _____
 Is an approved oil gland fitted? yes If so, state type Similar to Newark. Length of bearing next to and supporting propeller 10.63" & 12.6"
 Material of bearing _____ In multiple screw vessels is the liner between stern tube and A bracket continuous? no If not, is the exposed length of shafting between _____
 liners readily visible in dry dock? yes

PROPELLER. Diameter of propeller 2.82 ft Pitch 1.92 ft Built up or solid Solid Total developed surface 4.2 sq. ft.

No. of blades three Blade thickness at top of root fillet 1.693" Blade material Al. B.Z. Moment of inertia of dry propeller 2,193 lb/sq.
 If propeller is of special design, state type _____ Is propeller of reversible pitch type? no If so, is it of approved design? _____
 State method of control _____ Material of spare propeller Al. B.Z. Moment of inertia 2,193 lb/sq.

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? X

COOLERS. No. of main engine fresh water coolers 2 No. of main engine lubricating oil coolers 2 ME & 2G/Box.

OIL FUEL TANKS. No. and position of oil fuel settling or service tanks not forming part of hull structure 2; ER P & S service of fuel tank
1 only aft ER bulkhead 75 gal capacity

MAIN ENGINE DRIVEN PUMPS (No. and Purpose) Per each engine 1-FW pump; 1-SW pump; 1-Bilge pump 1-LO pump

1-LO G/Box pump 1-FO pump

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
<u>General Service Pump.</u>	X	X				X				X			X		X
<u>Any engine driven</u>															
<u>15 m³/hr.</u>															

BILGE SUCTIONS/ No. and size in each compartment 1 bilge pump room 2 Chain locker 1.81"; 2 Fwd. crew accommodation 1.81";

3 ER. 1.81" 1 aft crew accommodation 1.81; 1 after peak 1.81"

No. and size connected to main bilge line in main engine room 2; 1.81" In tunnel _____

In aux. engine room _____ Size and position of direct bilge suction in machinery spaces 1.81" Cr. aft

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? no Do the piping arrangements comply with the Rules no

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 ER.	EV 100 4SCSA	Motorfabriken BUKN A/S Kalundborg	Copenhagen 24.8.1962	6KW.DC.115 Volts and 0.75KW.DC. 24 Volts Generators and general service pump of 15 cu.m. capacity

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

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) Hand operated

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

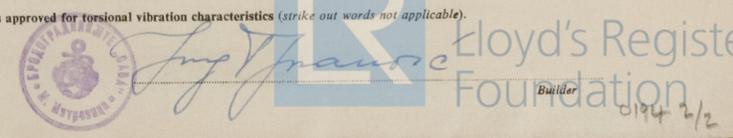
2 of 12 gal froth and 2 of 2 gal. CO2 in ER.

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 19.8.1963. 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) _____



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.

The machinery of this vessel have been constructed and installed under Special Survey in accordance with the Society's Rules, Approved plans and Secretary letters.

The material and Workmanship are good.

On completion of instalation the machinery, steering gear, windlass pumping and ventilat arrangements were examined under full power condition at sea with satisfactory results.

This ship is eligible in my opinion to be classed with the Society having notation + LLOYD'S 8/63; TS(OG) p&s 8/63.

Racki

J. Racki

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.557; LS.563; LS.538; LS.649; LS.614; LS.613; LS628.

CRANKSHAFT ~~OR ROTOR SHAFT~~ R 5579 & R5541

~~FLYWHEEL SHAFT~~

~~THRUST SHAFT~~

~~GEARING~~

INTERMEDIATE SHAFTS JR 20; JR 21

SCREW ~~AND TUBE~~ SHAFTS Rka.No.12417 & Rka.No.12417B

PROPELLERS Rka.No.12553 & Rka.No.12551

OTHER IMPORTANT ITEMS

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

Date of approval of plans for crankshaft Straight shafting 28.3.1962. Gearing Clutch
Separate oil fuel tanks Pumping arrangements 24.4.1962. Oil fuel arrangements 18.6.1962.
Cargo oil pumping arrangements Air receivers Donkey boilers

Dates of examination of principal parts:-

Fitting of stern tube 17.2.1963 • Fitting of propeller 23.4.1963 • Completion of sea connections 23.4.1963 • Alignment of crankshaft in main bearings
Engine chocks & bolts 25.6.1963. Alignment of gearing 25.6.1963. Alignment of straight shafting 25.6.1963. Testing of pumping arrangements 17.8.
Oil fuel lines 17.8.1963. Donkey boiler supports - Steering machinery 19.8.1963. Windlass 19.8.1963.

Date of Committee TUESDAY 14 JAN 1964 Special Survey Fee £50-0-0 + 105.000.-d

Decision Deferred for St.

Expenses 38.000.din.
Late attend. 1.534.-din.



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