

23 MAR 1964

Rpt. 4b

Date of writing report 4.3.64 Received London _____ Port Hamburg No. 13424
 Survey held at Elmshorn No. of visits _____ In shops _____ First date 13.9.63 Last date 3.2.64
 On vessel 6

FIRST ENTRY REPORT ON INTERNAL COMBUSTION MACHINERY

No. in R.B. _____ Name "JWTA MEGHNA" Gross tons _____
 Owners Inland Water Transport Authority East Pakistan Managers _____ Port of Registry Narayanganj
 Hull built at Elmshorn By Messrs. Kremer Sohn Yard No. 1102 Year 64 Month 2
 Main Engines made at Köln By Messrs. Deutz AG. Eng. No.S. 3682156-63 When 63 8
 Gearing made at Hameln By Messrs. Reintjes GmbH. Gear No.S. s.30546 p.30547 When 63 3
 Aux./donkey boilers made at _____ By _____ Blr. Nos. _____ When _____
 Machinery installed at Elmshorn By Messrs. Kremer Sohn When 64 2

Particulars of restricted service of ship, if limited for classification For River and Estuary Service

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 no Is ship an oil tanker? no

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 two oil engines over reversible single red.gears to straight shafting

MAIN RECIPROCATING ENGINES. Licence Name and Type No. Deutz heavy oil engines SBA8M517

No. of cylinders per engine 8 Dia. of cylinders 130 mm stroke(s) 170 mm 2 or 4 stroke cycle 4 Single or double acting single

Maximum BHP per engine approved for this installation 230 at 1350 RPM of engine and 386 RPM of propeller.

Corresponding MIP 10.2 kg/cm² (For DA engines give MIP top & bottom) Maximum cylinder pressure 70 kg/cm² Machinery numeral 92

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? _____ Are the undersides of the pistons arranged as supercharge pumps? _____ No. of exhaust gas driven blowers per engine _____ No. of supercharge air coolers per engine _____ Supercharge air pressure _____ Can engine operate without supercharger? _____

No. of valves per cylinder: Fuel _____ Inlet _____ Exhaust _____ Starting _____ Safety _____

Material of cylinder covers _____ Material of piston crowns _____ Is the engine equipped to operate on heavy fuel oil? _____

Cooling medium for: Cylinders _____ 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? _____ Frames? _____ Entablature? _____ 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? _____ Is the crankcase readily accessible? _____ 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? _____

Can the engine be reversed? no If not, how is reversing obtained? by reversing reduction gear

Has the engine been tested working in the shop? _____ How long at full power? 563 C.

CRANK & FLYWHEEL SHAFTING. Date of approval of torsional vibration characteristics of the propelling machinery system 7.5.63 State barred speed range(s), if imposed
 engines not below 500 RPM for spare propeller _____ Is a governor fitted? yes 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 _____

If shrunk, radial thickness around eyeholes _____ Are dowel pins fitted? _____ Crankshaft material: Journals _____ Minimum _____

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) _____

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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. State Port and report No.)

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. Full particulars to be reported on Form 4e.) Port Hammer Report No. 137 attached

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 85 mm Material roller bearing Minimum approved tensile strength _____

Shaft separate or integral with crank or wheel shaft gear output shaft Diameter of intermediate shaft _____ Material _____
Bronze liners in way A bracket bearings and oil glands 105 mm Is screwshaft fitted with a continuous liner? no
Minimum approved tensile strength _____ Diameter of screwshaft cone at large end _____

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 11 mm Thickness between bearings _____ How is the after end of the liner made watertight in the propeller boss?

Material of screw/tube shaft SM-steel Minimum approved tensile strength _____ Is an approved oil gland fitted? yes If so, state type Deutsche Werft Simplex

Length of bearing next to and supporting propeller 400 mm Material of bearing rubber 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. If of special design, state type no Is it of reversible pitch type? no

If so, is it of approved design? _____ State method of control _____

Propeller	Diameter	Pitch	Built or solid	Total developed surface	No. of blades	Blade thickness at top of root fillet	Blade material	Tensile strength	Design moment of inertia of propeller (dry)	For Class 1 or 2 ice strengthening only				Rake of blade
										Blade thickness at 25% radius	Blade thickness at tip	Length of blade section at 25% radius		
Working	<u>1250 mm</u>	<u>1040 mm</u>	<u>solid</u>	<u>0.663 m²</u>	<u>4</u>	<u>37.5 mm</u>	<u>bronze</u>	<u>48.7 kg/cm²</u>	<u>46.24 kg/cm²</u>					
Spare														

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 2 No. of main engine lubricating oil coolers 2

OIL FUEL TANKS. No. and position of oil fuel settling or service tanks not forming part of hull structure two top ER casing each 630 ltrs.

MAIN ENGINE DRIVEN PUMPS (No. and Purpose) one SW., one FW., one lub. oil, each engine

INDEPENDENT PUMPS Name below essential pumps, state position and how driven. Give capacity of bilge pumps.	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	
Stbd. aux. engine attached bilge and fire pump 25 m ³ /h	X	X	X			X				X			X			
Port. aux. engine attached bilge and fire pump 25 m ³ /h	X	X	X			X				X			X			
ED. OF. transfer pump port ER				X								X				

BILGE SUCTIONS. No. and size in each hold, deep tank or pump room fwd. side spaces port and stbd. aft. 1x50 mm dia. each,
empty spaces midships port and stbd. aft. 1x50 mm dia. each, after space centre fwd. 1x50 mm dia.
stbd. fwd. 1x50 mm dia., port aft. 1x50 mm dia., centre aft 1x50 mm dia.

No. and size connected to main bilge line in main engine room stbd. fwd. 1x50 mm dia., port aft. 1x50 mm dia., centre fwd. 1x50 mm dia.

In aux. engine room _____ Size and position of direct bilge suction in machinery spaces port and stbd. aft. 1x50 mm dia. each

Size and position of emergency bilge suction in machinery spaces port and stbd. aft. 1x50 mm dia. each

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 oil tankers, ships carrying cargo oil or classed for navigation in ice Class 1, 2 or 3? (Strike out words not applicable) 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)
Stbd. ER platform	oil engine	Deutz AG	KLN 63/573	12kW-one bilge & fire pump
port ER platform	oil engine	Deutz AG	KLN 63/176	12kW-one bilge & fire 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 1 x 12 kW

Is an electric generator driven by Main Engine? no

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

Position _____

Is a superheater fitted? _____ Are these boilers also heated by exhaust gas? _____ No. of aux./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 aux./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 _____

No. of steam condensers _____ No. of Evaporators _____

STEERING GEAR. (State No. and Type of Steam Engines, Electric Motors, Hydraulic Pumps and other particulars including particulars of alternative means of steering) _____

hand operated

Have the Rule Requirements for fire extinguishing arrangements been complied with? yes Brief description of arrangements one hydrant in ER with hose and combined nozzle, one 45 ltr. foam extinguisher, one CO₂, two 9.5 ltr. foam, hand pump 58 ltr./min. on deck

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 3.2.64 - 8 hrs. 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 have been examined during construction, properly installed in the above ship and are eligible, in my opinion, to be classed with the notation *LMC 2.64 and the notation TS(OG).

A notice board has been fitted at the control stations stating:-

main engines not to be operated continuously below 500 RPM

Note:- No gear hammer was noted at any revolutions.

Robert Brown
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

CRANKSHAFT OR ROTORSHAFT

FLYWHEEL SHAFT

THRUSTSHAFT

GEARING LLOYD'S HNO 30546 25.3.63 HB, LLOYD'S HNO 30547 28.3.63 HB

INTERMEDIATE SHAFTS

SCREW AND TUBE SHAFTS LLOYD'S HAM 1478 A+B 7.5.63 AK

PROPELLERS LLOYD'S HAM 1191 & 1192 19.3.63 AK

OTHER IMPORTANT ITEMS Sterntubes LLOYD'S HAM 1939 A+B 9.7.63 AK

2 Spare screwshafts Lloyd's Ham 63/2656 & 7.

Is the installation a duplicate of a previous case? yes If so, state name of vessel Yard Nos. 1100 and 1101

Date of approval of plans for crankshaft Straight shafting 8.1.63 Gearing Clutch

Separate oil fuel tanks 25.7.63 Pumping arrangements 24.7.63 Oil fuel arrangements 24.7.63

Cargo oil pumping arrangements Air receivers Aux./donkey boilers

Dates of examination of principal parts:-

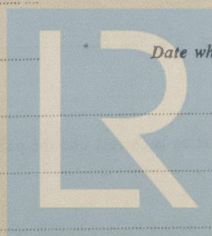
Fitting of stern tube 11.11.63 Fitting of propeller 17.1.64 Completion of sea connections 11.11.63 Alignment of crankshaft in main bearings

Engine chocks & bolts 10.1.64 Alignment of gearing 10.1.64 Alignment of straight shafting 10.1.64 Testing of pumping arrangements 3.2.6

Oil fuel lines 13.1.64 Donkey boiler supports Steering machinery 3.2.64 Windlass 3.2.64

Date of Committee MONDAY 27 APR 1964 Special Survey Fee £ 65.15.0

Decision Deferred for further examination Expenses £ 6.0.0



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