

Rpt. 4b

4961 717 '02

Date of writing report 23rd April, 1964 Received London Bremen Port No. 7189
Survey held at Lemwerder/Weser No. of visits In shops 8 On vessel 8 First date 8.1.1964 Last date 6.7.1964

FIRST ENTRY REPORT ON INTERNAL COMBUSTION MACHINERY

No. in R.B. Name Passenger- and car twin-screw motor ferry "IWTA FARIDPUR" Gross tons 290.46
The East Pakistan Inland Water Owners Transport Authority, Dacca Managers - Port of Registry Narayanganj
Hull built at Lemwerder By Abeking & Rasmussen Yard No. 5894 When 64, 4
Main Engines made at Köln-Deutz By Klöckner-Humboldt Deutz AG Eng. No. 3681460-471 3681448-459 When 63 10
Gearing made at Hameln/Weser By Eisenwerke Reintjes GmbH, Gear No. 30581/82 When 63 5
Aux./donkey boilers made at None By - Blr. Nos. - When -
Machinery installed at Lemwerder By Abeking & Rasmussen When 64 4

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 None
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? 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 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 each connected via reverse/reduct.gear to prepeller

MAIN RECIPROCATING ENGINES. Licence Name and Type No. Klöckner-Humboldt Deutz Type SBF 12 M 716

No. of cylinders per engine Dia. of cylinders stroke(s) 2 or 4 stroke cycle Single or double acting
Maximum BHP per engine approved for this installation at RPM of engine and RPM of propeller.

Corresponding MIP (For DA engines give MIP top & bottom) Maximum cylinder pressure Machinery numeral 128

Are the cylinders arranged in Vee or other special formation? 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 F.W. 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? built up seating How is the engine started?

Can the engine be reversed? If not, how is reversing obtained?

Has the engine been tested working in the shop? How long at full power?

CRANK & FLYWHEEL SHAFTING. Date of approval of torsional vibration characteristics of the propelling machinery system 12.7.63 State barred speed range(s), if imposed for working propeller none For spare propeller none 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

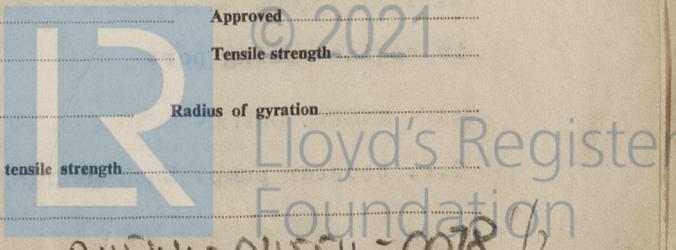
If shrunk, radial thickness around eyeholes Are dowel pins fitted? Crankshaft material: Journals Approved Webs Tensile strength

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 Köln F.E. Reports Nos. 887 & 888



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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 Hannover
 Report No. 139 and 140

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 de-clutched? _____ If so, what? _____

STRAIGHT SHAFTING. Diameter of thrustshaft _____ Material _____ Minimum approved tensile strength _____
 Shaft separate or integral with crank or wheel shaft? integral w. gearing Diameter of intermediate shaft 100 mm Material S.M. steel
 actual _____
 Minimum tensile strength 54.6 kg/mm² Diameter of screwshaft cone at large end 125 mm Is screwshaft fitted with a continuous liner? No
 Diameter of tube shaft. (If these are separate shafts) None Is tube shaft fitted with a continuous liner in way of stern tube _____ Thickness of screwshaft liner at bearings 12.5/10 mm How is the after end of the liner made watertight in the propeller boss? Rubber ring
 Material of screwshaft S.M. Steel actual tensile strength 56.4 kg/mm² Is an approved oil gland fitted? Yes If so, state type "Simplex"
 Length of bearing next to and supporting propeller 385 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
 Is it of reversible pitch type? No

PROPELLER. If of special design, state type No State method of control _____
 If so, is it of approved design? _____

Propeller port + stbd.	Diameter mm	Pitch mm	Built or solid	Total developed surface m ²	No. of blades	Blade thickness at top of root fillet mm	Blade material	Tensile strength kg/mm ²	Design moment of inertia of propeller (2y) kg/m ⁴	For Class 1 or 2 ice strengthening only			
										Blade thickness at 25% radius	Blade thickness at tip	Length of blade section at 25% radius	Rake of blade
Working	1450	1050	solid	0,91	4	41,5	Bronze	56.6	95.8	-	-	-	-
Spare													

AIR COMPRESSORS & RECEIVERS. No. of main engine driven compressors per engine _____ Can they be de-clutched? _____
 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 ~~starters~~ first charged? batteries port aux. diesel generator fitted with inertia starter 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? Yes

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 One - 50 litre fuel tank for galley in engine casing port

MAIN ENGINE DRIVEN PUMPS (No. and Purpose) Each M.E.: one S.W., one F.W. one luboil-, one bilge- and one O.F. booster pump. Each gearing one luboil pump.

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	Overboard
2 bilge pumps, p+s M.E. driven 10.5 m ³ /h at 15 m head	X															X
2 bilge pumps, p+s aux. O.E. driven 24 m ³ /h at 30 m head	X	X				X				X			X			X
2 S.W. circ. pumps, p+s M.E. attached					X	X				X	X					
2 F.W. circ. pumps, p+s aux. O.E. driven					X						X					
Hand operated fire pump on main deck port aft						X							X			
O.F. transfer pump, electr. driven E.R. forward					X								X			
O.F. transfer pump-hand-operated E.R. forward					X								X			
2 F.W. circ. pumps, p+s M.E. driven					X						X					

BILGE SUCTIONS. No. and size in each hold, deep tank or pump room F.P. = 1 - 50 mm, 1 - 50 mm in all dry spaces, Nos. 1, 2, 3 and 4 port and starboard, A.P. = 1 - 50 mm
 No. and size connected to main bilge line in main engine room 2 - 50 mm In tunnel _____
 In ~~main engine room~~ battery room: 1 - 50 mm Size and position of direct bilge suction in machinery spaces 1 - 50 mm port forward and starboard 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 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) Not applicable

STEAM & OIL ENGINE AUXILIARIES

Position of each	Type	Made by	Port and No. of Rpt. or Cert.	Driven Machinery (For electric generators, state output)
E.R. port	A 3 M 514	Klöckner Humboldt Deutz A.G. Köln	Köln Certificates 63/923 + 63/924	Each one 18 kW generator one bilge/fire pump one F.W. circ. pump
E.R. starboard				

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 at sea _____
 Is an electric generator driven by Main Engine? Yes, for charging batteries

STEAM INSTALLATION. No. of aux. donkey boilers burning oil fuel _____ W.P. _____ Type _____
 (See Circular 2144)
 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-hydraulic steering gear also tillers with block and tackle as approved
 Have the Rule Requirements for fire extinguishing arrangements been complied with? Yes Brief description of arrangements One 40 mm hydrant in E.R. with hose and nozzle, 50 litre froth extinguisher with hose, 2-6 kg portable CO₂ extinguishers+2-9 litre portable foam extinguishers.
 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 9.4.1964 4 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.)
 Builder Abeking & Rasmussen
 Lloyd's Register Foundation

0078²/12



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 main- and aux. machinery of this twin-screw motor ferry has been constructed (See Köln F.E. Reports Nos. 887 + 888) and installed under Special Survey in accordance with the Rules, the approved plans and the Secretary's letters, the materials and workmanship are good. The ship is eligible in my opinion to have the notation +LMC, TS when the ship has satisfactorily arrived at Chalna/Pakistan also 2 oil engines 4 S A 8 cylinders 130 x 170 mm single reduction/reverse geared to 2 sc. shafts Klöckner - Humboldt - Deutz A.G. Köln-Deutz.

Note: Electro and steel wire control for the main engine is provided on the bridge by means of which starting, stopping, reversing and speed regulations can be carried out in addition to the normal hand controls at the engine. The efficient operation of the controls was tested working and found in order.

[Signature]
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 Port: 30582 LLOYDS HNO. HB 27.5.63, Starbd. 30581 LLOYDS HNO. HB 27.5.63

INTERMEDIATE SHAFTS P = LLOYDS HAM 2616A A.K. 20.9.63 S = LLOYDS HAM 2616 B A.K. 20.9.63

SCREW AND TUBE SHAFTS ~~XXXXXX~~ P = LLOYDS HAM 2615 A A.K. 20.9.63 S = LLOYDS HAM 2615 B A.K. 20.9.63

PROPELLERS LLOYDS HAM 2802 (port) and 2803 (starbd) 12.11.63 AK.

OTHER IMPORTANT ITEMS 2 stern tubes : LLOYDS HAM 2757 A,B A.K. 18.10.63

Is the installation a duplicate of a previous case? **yes** If so, state name of vessel "IWTA DACCA" "IWTA COMILLA"

Date of approval of plans for crankshaft **3.12.62** Straight shafting **3.12.62** Gearing **-** Clutch **-**

Separate oil fuel tanks **-** Pumping arrangements **2.4.63** Oil fuel arrangements **2.4.63**

Cargo oil pumping arrangements **-** Air receivers **-** Aux./donkey boilers **-**

Dates of examination of principal parts:—

Fitting of stern tube **8.1.64** Fitting of propeller **27.1.64** Completion of sea connections **2.4.64** Alignment of crankshaft in main bearings **-**

Engine chocks & bolts **2/3.4.64** Alignment of gearing **2/3.4.64** Alignment of straight shafting **2/3.4.63** Testing of pumping arrangements **7.4.64**

Oil fuel lines **3.4.64** Donkey boiler supports **-** Steering machinery **9.4.64** Windlass **9.4.64**

Date of Committee **FRIDAY 30 OCT 1964**

Decision **+ LMC ES** } **7.64** Special Survey Fee **7.64**

TS pvs (05) } **7.64** Install. of Mchy. **92-10-0**

Expenses **7-10-0**

