

## Rpt. 4b

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

## FIRST ENTRY REPORT ON INTERNAL COMBUSTION MACHINERY

No. in R.B. Passenger- and car twin-screw motor ferry "IWTA FARIDPUR" Gross tons 290.46  
 Name 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 2 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 887.6 Machinery numeral 128

Are the cylinders arranged in Vee or other special formation? 887.6 If so, number of crankshafts per engine 887.6

TWO STROKE ENGINES. Is the engine of opposed piston type? 887.6 If so, how are upper pistons connected to crankshaft? 887.6

Is the exhaust discharged through ports in the cylinders or through valve(s) in the cylinder covers? 887.6 No. and type of mechanically driven scavenge pumps or blowers per engine and how driven 887.6

No. of exhaust gas driven scavenge blowers per engine 887.6 Where exhaust gas driven blowers only are fitted, can the engine operate with one blower out of action? 887.6

If a stand-by or emergency pump or blower is fitted, state how driven 887.6 No. of scavenge air coolers 887.6 Scavenge air pressure at full power 887.6

Are scavenge manifold explosion relief valves fitted? 887.6

TWO AND FOUR STROKE ENGINES. Is the engine supercharged? 887.6 Are the undersides of the pistons arranged as supercharge pumps? 887.6 No. of exhaust gas driven blowers per engine 887.6

No. of supercharge air coolers per engine 887.6 Supercharge air pressure 887.6 Can engine operate without supercharger? 887.6

No. of valves per cylinder: Fuel 887.6 Inlet 887.6 Exhaust 887.6 Starting 887.6 Safety 887.6

Material of cylinder covers 887.6 Material of piston crowns 887.6 Is the engine equipped to operate on heavy fuel oil? 887.6

Cooling medium for: Cylinders F.W. Pistons - Fuel valves - Overall diameter of piston rod for double acting engines 887.6

Is the rod fitted with a sleeve? 887.6 Is welded construction employed for: Bedplate? 887.6 Frames? 887.6 Entablature? 887.6 Is the crankcase separated from the underside of pistons? 887.6

Is the engine of crosshead or trunk piston type? 887.6 Total internal volume of crankcase 887.6 No. and total area of explosion relief devices 887.6

Are flame guards or traps fitted to relief devices? 887.6 Is the crankcase readily accessible? 887.6 If not, must the engine be removed for overhaul of bearings, etc? 887.6

Is the engine secured directly to the tank top or to a built-up seating? built up seating How is the engine started? 887.6

Can the engine be reversed? 887.6 If not, how is reversing obtained? 887.6

Has the engine been tested working in the shop? 887.6 How long at full power? 887.6

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 887.6

for working propeller none For spare propeller none Is a governor fitted? 887.6 Is a torsional vibration damper or detuner fitted to the shafting? 887.6

Where positioned? 887.6 Type 887.6 No. of main bearings 887.6 Are main bearings of ball or roller type? 887.6

Distance between inner edges of bearings in way of crank(s) 887.6 Distance between centre lines of side cranks or eccentrics of opposed piston engines 887.6

Crankshaft type: Built, semi-built, solid. (State which) 887.6

Diameter of journals 887.6 Diameter of crankpins 887.6 Centre 887.6 Breadth of webs at mid-throw 887.6 Axial thickness of webs 887.6

Side 887.6 Pins 887.6 Minimum 887.6

If shrunk, radial thickness around eyeholes 887.6 Are dowel pins fitted? 887.6 Crankshaft material: Journals 887.6 Approved 887.6

Webs 887.6 Tensile strength 887.6

Diameter of flywheel 887.6 Weight 887.6 Are balance weights fitted? 887.6 Total weight 887.6 Radius of gyration 887.6

Diameter of flywheel shaft 887.6 Material 887.6 Minimum approved tensile strength 887.6

Flywheel shaft: separate, integral with crankshaft, integral with thrustshaft. (State which) 887.6



# 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 ~~7500~~ tensile strength **54.6 kg/mm<sup>2</sup>** 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 screw/line shaft liner at bearings **12.5/10 mm** Thickness between bearings..... How is the after end of the liner made watertight in the propeller boss? **Rubber ring**

Material of screwshaft **S.M. Steel** actual..... Minimum ~~7500~~ tensile strength **56.4 kg/mm<sup>2</sup>** 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**

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 (I <sub>p</sub> )	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).....

batteries port aux. diesel generator  
How are ~~XXXX~~ first charged? **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.**

Service for which each pump is connected to be marked thus X

INDEPENDENT PUMPS Name below essential pumps, state position and how driven. Give capacity of bilge pumps.	SUCTION							DELIVERY							Over- board	
	Bilge Main	Bilge Direct	Ballast Main	Oil Fuel	Fresh Water Cool- ing	Sea	Feed Tanks	Lub. Oil	Boiler Feed	Salt Water Cool- ing	Fresh Water Cool- ing	Oil Fuel Tanks	Fire Main	Lub. Oil		Piston Cool- ing
2 bilge pumps, p+s M.E.driven 10.5 m <sup>3</sup> /h at 15 m head	x															x
2 bilge pumps, p+s aux. O.E. driven 24 m <sup>3</sup> /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 ~~XXXXXX~~ battery room: 1 - 50 mm

Size and position of direct bilge suctions in machinery spaces **1 - 50 mm**

port forward and starboard aft

Size and position of emergency bilge suctions 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 units.....

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

Have the Rule Requirements for fire extinguishing arrangements been complied with? **Yes** as approved 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 CO<sub>2</sub> 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.)

Abel & Rasmussen  
Builder  
Lloyd's Register Foundation

0078212



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.

*W. M. K. K.*

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 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 -

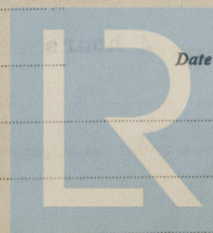
Engine checks & bolts 2/3.4.64 Alignment of gearing 2/3.4.64 Alignment of straight shafting 2/3.4.63 Testing of pumping arrangements 7.4.64

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 TS pvs (05) } 7.64 Special Survey Fee Install. of Mchy. 92-10-0

Expenses 7-10-0



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