Rpt. 4b

10 OCT 1963

Date of writing report 19.9.63 | Received London | Port HAMBURG | No. 12 986

Survey held at Elmshorn | No. of visits In shops 13 On vessel | First date 26.1.63 | Last date 13.8.63

FIRST ENTRY REPORT ON INTERNAL COMBUSTION MACHINERY

No. in R.B. | Name "IWTA GUMTI" | Gross tons

Owners | Managers | Port of Registry Narayanganj

				Year	Month
Hull built at Elmshorn	By Messrs. Kremer Sohn	Yard No. 1100	When	63	8
Main Engines made at Köln	By Messrs. Klöckner-Humboldt-Deutz A.G.	Eng. No. s.3529403/10 p.3529387/94	When	63	3
Gearing made at Hameln	By Messrs. Reintjes GmbH. Eisenwerke	Gear No. s. 131-30542 p. 131-30543	When		
Aux./donkey boilers made at –	By –	Blr. Nos. –	When	–	–
Machinery installed at Elmshorn	By Messrs. Kremer Sohn		When	63	8

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: – | 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 relevent 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. gear to straight shafting

MAIN RECIPROCATING ENGINES. Licence Name and Type No. Deutz heavy oil engines SBA8M 517

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 102 kg/cm^2 (*For DA engines give MIP top & bottom*) | Maximum cylinder pressure 70 kg/cm^2 | 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? electrically

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? –

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 for working propeller 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 / Side | Breadth of webs at mid-throw | Axial thickness of webs

If shrunk, radial thickness around eyeholes | Are dowel pins fitted? | Crankshaft material: Journals / Webs | Pins | Minimum | Approved | 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 Klu Rpt. 8/16 & 8/11½ Nos.

011544 - 011554 - 0104½

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. (*A small diagram should be attached showing gas cycle.*)
HP drives ..... at ..... RPM HP gas inlet temperature ..... pressure .....
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 .....

Report No. .....

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 –

Minimum approved tensile strength – Diameter of screwshaft cone at large end 105 mm 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 liner at bearings 11 mm Thickness between bearings – How is the after end of the liner made watertight in the propeller boss? Bronze liners in way A bracket bearings and oil glands

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 ..... Is it of reversible pitch type ? .....

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

Propeller	Diameter mm	Pitch mm	Built or solid	Total developed surface m²	No. of blades	Blade thickness at top of root fillet mm	Blade material	Tensile strength	Design moment of inertia of propeller (dry) kgm²	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	1250	1040	solid	0.663	4	37.5	bronze		46.24				
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*) .....
el. Starter 7. Ch.H. Par 711.

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-casings each 630 ltrs.

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

10 OCT 1963

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: Bilge Main	Bilge Direct	Ballast Main	Oil Fuel	Fresh Water Cooling	Sea	Feed Tanks	Lub. Oil	DELIVERY: Boiler Feed	Salt Water Cooling	Fresh Water Cooling	Oil Fuel Tanks	Fire Main	Lub. Oil	Piston Cooling
s. aux. engine attached bilge and fire pump	X	X	X			X				X			X		
p. aux. engine attached bilge and fire pump	X	X	X			X				X			X		
ED OF-transfer pump p. ER				X								X			

BILGE SUCTIONS. No. and size in each hold, deep tank or pump room Fwd. side spaces, p+s aft 1 x 50 mm dia each, Empty space midships p+s aft 1 x 50 mm dia. each, after space 1 x 50 mm dia. centre fwd. centre 1 x 50 mm dia.

No. and size connected to main bilge line in main engine room s.fwd. 1 x 50 mm dia, aft.p. 1 x 50 mm dia., aft. ~~in tunnel~~

In aux. engine room ..... Size and position of direct bilge suctions in machinery spaces fwd.centre 1 x50 mm dia.

Size and position of emergency bilge suctions in machinery spaces p+s aft 1 x 50 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 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)
s.Engineroomplatform	oil engine	Deutz AG.	Bayt KLN 63/418	12 kW 1 bilge +fire pump
p.Engineroomplatform	oil engine	Deutz AG.	KLN 63/175	12 kW 1 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 ..... (*See Circular 2144*) 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 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 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 CO_2, two 9.5 ltrs. 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 13.8.63 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*)

~~Builder's Representative~~ Builder

0104 2/2

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 8.63 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 revolution.

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 30542 7.2.63 HB, LLOYD'S HNO 30543 30.1.63 FK

INTERMEDIATE SHAFTS

SCREW AND TUBE SHAFTS LLOYD'S HAM 1167 A+B 5.3.63 AK

PROPELLERS LLOYD'S HAM 2069 + 2070 20.8.63 AK

OTHER IMPORTANT ITEMS Sterntubes - LLOYD'S HAM 1153 A+B 19.2.63 AK

Is the installation a duplicate of a previous case? no **If so, state name of vessel** –

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 26.3.63 **Fitting of propeller** 16.4.63 **Completion of sea connections** 16.4.63 **Alignment of crankshaft in main bearings** –

Engine chocks & bolts 2.7.63 **Alignment of gearing** 2.7.63 **Alignment of straight shafting** 2.7.63 **Testing of pumping arrangements** 13.8.63

Oil fuel lines 19.7.63 **Donkey boiler supports** – **Steering machinery** 13.8.63 **Windlass** 13.8.63

Date of Committee FRIDAY - 1 NOV 1963

Decision Referred for Gen. Exam.

Special Survey Fee £ 65.15.0

Expenses £ 13.8.0

Date when A/c rendered

10m,6,60 T. (MADE & PRINTED IN ENGLAND)