

Rpt. 4b

Date of writing report
4.3.64

Received London
Port
Hamburg
No.
13425

Survey held at
Elmshorn

No. of visits
On vessel
7

First date
13.9.63
Last date
6.2.64

FIRST ENTRY REPORT ON INTERNAL COMBUSTION MACHINERY

No. in R.B.

Name

"JWTA JAMUNA"

Gross tons

Owners

Inland Water Transport Authority East Pakistan

Managers

-

Port of Registry

Narayanganj

Hull built at

Elmshorn

By

Messrs. Kremer Sohn

Yard No.

1103

When

Year 64.2

Main Engines made at

Köln

By

Messrs. Deutz AG.

Eng. No.

p. 3682148-55
s. 3529867-74

When

63.8

Gearing made at

Hameln

By

Messrs. Reintjes GmbH.

Gear NoS.

p. 30544
30545

When

63.4

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

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?

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

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)

011544-011554-0052112

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
 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
 bronze liners in way A bracket bearings and oil glands
 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?
 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

PROPELLERS If of special design, state type no Is it of reversible pitch type? n o
 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			
										Blade thickness at 25% radius	Blade thickness at tip	Length of blade section at 25% radius	Rake of blade
Working	1250 mm	1040 mm	solid	0.2663 m ²	4	37.5 mm	bronze	48.7 kg/cm ²	46.24 kg/cm ²				
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 650 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.	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
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 pt.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.

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

In aux. engine room Size and position of direct bilge suction in machinery spaces centre fwd. 1x50 mm dia. port and stbd.aft. 1x32 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 63/575	12 kW-one bilge & fire pump
Port ER.platform	oil engine	Deutz AG	KLN 63/805	12 kW-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 1x12 kW Is an electric generator driven by Main Engine? no

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 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 6.2.64 - 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.)

D. W. Kramer Sohn
 Registered Engineer
 Foundation
 Builder

0052 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 2.64 and the notation TS(OG).

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

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 30544 25.3.63 HB, LLOYD'S HNO 30545 28.3.63 HB

INTERMEDIATE SHAFTS

SCREW AND TUBE SHAFTS LLOYD'S HAM 2061 A+B 26.7.63 AK

PROPELLERS LLOYD'S HAM 2755 2756 18.10.63 AK

OTHER IMPORTANT ITEMS Sterntubes LLOYD'S HAM 2653 A+B 4.10.63 AK

Is the installation a duplicate of a previous case? yes If so, state name of vessel Yard No. 1102

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:-

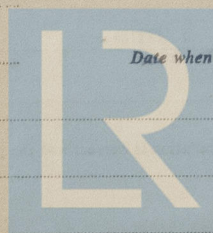
Fitting of stern tube 12.12.63 Fitting of propeller 29.1.64 Completion of sea connections 10.1.64 Alignment of crankshaft in main bearings -

Engine checks & bolts 17.1.64 Alignment of gearing 17.1.64 Alignment of straight shafting 17.1.64 Testing of pumping arrangements 6.2.64

Oil fuel lines 17.1.64 Donkey boiler supports - Steering machinery 3.2.64 Windlass 6.2.64

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

Decision Deferred for General Exam Expenses £ 7.0.0



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