

Rpt. 4b

Date of writing report 26.11.1957 Received London 12 DEC 1957 Port Hamburg No. 6107
Survey held at Hamburg No. of visits 12 In shops 4.11.1956 First date 22.11.1957
On vessel -- Last date --

FIRST ENTRY REPORT ON INTERNAL COMBUSTION MACHINERY

No. in R.B. Name Gross tons
Owners Malabar Steamship Co. Managers Soci te d'Exploitation des Port of Registry Year Month
Hull built at Bruges, Belgium By Chantiers Navals de Bruges Yard No. 3415 When
Main Engines made at Hamburg By Maschinenfabrik Augsburg-N rnberg. Eng. No. 405 209 When 57.11
Gearing made at By
Donkey boilers made at By Blr. Nos. When
Machinery installed at By When

Particulars of restricted service of ship, if limited for classification

Particulars of vegetable or similar cargo oil notation, if required

Is ship to be classed for navigation in ice?

Is ship intended to carry petroleum in bulk?

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 may 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 the port and report number should be stated.

No. of main engines 1 No. of propellers 1 Brief description of propulsion system One diesel engine single reduction geared to one screwshaft

MAIN RECIPROCATING ENGINES. Licence Name and Type No. MAN Type G 8 V 40/60 (with supercharging)

No. of cylinders per engine 8 Dia. of cylinders 400 mm stroke(s) 600 mm 2 or 4 stroke cycle 4 Single or double acting single

Maximum approved BHP per engine 1680 at 275 RPM of engine and -- RPM of propeller.

Corresponding MIP 9,1 kg/cm² (For DA engines give MIP top & bottom) Maximum cylinder pressure 62 kg/cm² Machinery numeral 336

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? --

FOUR STROKE ENGINES. Is the engine supercharged? yes

Are the undersides of the pistons arranged as supercharge pumps? no

No. of exhaust gas driven blowers per

engine one

No. of supercharge air coolers per engine none

Supercharge air pressure 0,47 kg/cm²

Can engine operate without supercharger? yes

TWO & FOUR STROKE ENGINES—GENERAL. No. of valves per cylinder: Fuel 1 Inlet 1 Exhaust 1 Starting 1 Safety 1

Material of cylinder covers cast iron

Material of piston crowns aluminium - alloy

Is the engine equipped to operate on heavy fuel oil? no

Cooling medium for :—Cylinders fresh water

Pistons not cooled

Fuel valves fuel

Overall diameter of piston rod for double acting engines none

Is the rod fitted with a sleeve? --

Is welded construction employed for: Bedplate? yes

Frames? no

Entablature? no

Is the crankcase separated from the

underside of pistons? no

Is the engine of crosshead or trunk piston type? piston

Total internal volume of crankcase 9,6 m³

No. and total area of explosion relief

devices 8 x 245 cm²

Are flame guards or traps fitted to relief devices? valves

Is the crankcase readily accessible? yes

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? compr. air

Can the engine be directly reversed? yes

If not, how is reversing obtained? --

Has the engine been tested working in the shop? yes

How long at full power? 5 hours

CRANK & FLYWHEEL SHAFTING. Date of approval of torsional vibration characteristics of the propelling machinery system 1.10.1957

State barred speed range(s), if imposed

for working propeller --

For spare propeller --

Is a governor fitted? yes

Is a torsional vibration damper or detuner fitted to the shafting? yes

Where positioned? forw. end of crankshaft

Type Huelsenfeder

No. of main bearings 10

Are main bearings of ball or roller

type? no

Distance between inner edges of bearings in way of crank(s) 514 mm

Distance between centre lines of side cranks or eccentrics of opposed piston engines --

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

Diameter of journals 280 mm

Diameter of crankpins

Centre 280 mm

Breadth of webs at mid-throw 465 mm

Axial thickness of webs 140 mm

If shrunk, radial thickness around eyeholes solid forged

Are dowel pins fitted? --

Crankshaft material Journals SM Steel

Approved 50 kg/mm²

Diameter of flywheel 1500 mm

Weight 2350 kgs

Are balance weights fitted? no

Total weight --

Radius of gyration --

Diameter of flywheel shaft none

Material --

Minimum approved tensile strength --

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

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|--|--|---|--|--|--|--|--|
| MAIN GAS TURBINES. Name and type No. _____ | | Open or closed cycle _____ | | BHP per set _____ at _____ | | RPM of output shaft _____ | |
| No. of sets of turbines _____ | | | | | | | |
| 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.) | | | | | | | |
| 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. A small line sketch should be attached showing arrangement of gearing.) | | | | | | | |
| Is gearing of single or double helical type? _____ | | If single, position of gear thrust bearing _____ | | Is gearing of epicyclic type? _____ | | | |
| PCD of pinions: First reduction _____ | | Second reduction _____ | | PCD of wheels: First reduction _____ | | Main _____ | |
| Material of pinions _____ | | Tensile strength _____ | | Material of wheel rims _____ | | Tensile strength _____ | |
| Are gear teeth surface hardened? _____ | | How are teeth finished? _____ | | Diameter of pinion journals _____ | | Wheel sh _____ | |
| journals _____ | | Are the wheels of welded construction? _____ | | Is gearcase of welded construction? _____ | | Has the wheel/gearcase been heat treated on completion _____ | |
| of welding? _____ | | Where is the propeller thrust bearing located? _____ | | Are gear bearings of ball or roller type? _____ | | | |
| 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 _____ | | Material _____ | | Minimum approved tensile strength _____ | | | |
| Shaft separate or integral with crank or wheel shaft? _____ | | Diameter of intermediate shaft _____ | | Material _____ | | | |
| Minimum approved tensile strength _____ | | Diameter of screwshaft cone at large end _____ | | Is screwshaft fitted with a continuous liner? _____ | | | |
| 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 lin _____ | | | |
| bearings _____ | | Thickness between bearings _____ | | Material of screw/tube shaft _____ | | Minimum approved tensile strength _____ | |
| Is an approved oil gland fitted? _____ | | If so, state type _____ | | Length of bearing next to and supporting propeller _____ | | | |
| Material of bearing _____ | | In multiple screw vessels is the liner between stern tube and A bracket continuous? _____ | | If not, is the exposed length of shafting between _____ | | | |
| liners readily visible in dry dock? _____ | | | | | | | |
| PROPELLER. Diameter of propeller _____ | | Pitch _____ | | Built up or solid _____ | | Total developed surface _____ | |
| No. of blades _____ | | Blade thickness at top of root filler _____ | | Blade material _____ | | Moment of inertia of dry propeller _____ | |
| If propeller is of special design, state type _____ | | Is propeller of reversible pitch type? _____ | | If so, is it of approved design? _____ | | | |
| State method of control _____ | | Material of spare propeller _____ | | Moment of inertia _____ | | | |
| 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 _____ | | | |
| accordance with the Rules? _____ | | Has the starting of the main engines been tested and found satisfactory? _____ | | | | | |
| COOLERS. | | No. of main engine fresh water coolers _____ | | No. of main engine lubricating oil coolers _____ | | | |
| OIL FUEL TANKS. No. and position of oil fuel settling or service tanks not forming part of hull structure _____ | | | | | | | |

MAIN ENGINE DRIVEN PUMPS (No. and Purpose) 1 lub. oil pump 22,85 m³/h
8 oil fuel injection pumps (camshaft driven) 1 oil fuel delivering pump 2,64 m³/h

[illegible]

BILGE SUCTIONS. No. and size in each hold, deep tank or pump room.....

No. and size connected to main bilge line in main engine room..... In tunnel.....

In aux. engine room..... Size and position of direct bilge suction in machinery spaces.....

..... 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?..... Do the piping arrangements comply with the Rules including special requirements for ships carrying petroleum in bulk, cargo oil or classed for navigation in ice? (*strike out words not applicable*).

[illegible]

Is electric current used for essential services at sea?..... 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?.....

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

Position

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

Have the Rule Requirements for fire extinguishing arrangements been complied with?..... Brief description of arrangements

Has the spare gear required by the Rules been supplied?..... Has all the machinery been tried under full working conditions and found satisfactory?..... Date and duration of full-power sea trials of main engines..... 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~~).

Maschinenfabrik Augsburg-Nürnberg A.G.
P.P.A.

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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.

This Engine has been constructed under Special Survey in conformity with the Society's Rules and Regulations, the approved plans and the Secretary's letters. The Materials and Workmanship are good. This engine has been examined during construction and under working conditions on the Makers' test bed and is eligible in my opinion to have the record ~~LMC~~ (with date) after satisfactory installation on board the above ship.

E. J. Allen
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 Connecting rods: LLOYD'S AUG. B. A. 1, 18. 9. 1957 G. H.

CRANKSHAFT ~~OR ROTORSHAFT~~ LLOYD'S HAM 302 30. 9. 1957 E. A. ✓

FLYWHEEL SHAFT

THRUSTSHAFT

GEARING

INTERMEDIATE SHAFTS

SCREW AND TUBE SHAFTS

PROPELLERS

OTHER IMPORTANT ITEMS Bed plate: LLOYD'S HAM 381 15. 5. 1957 RFK

Supercharge Blower: LLOYD'S TEST AUG. 1615 16. 8. 1957 G. H.

Is the installation a duplicate of a previous case?

If so, state name of vessel

Date of approval of plans for crankshaft 21. 3. 57

Straight shafting

Gearing

Clutch

Separate oil fuel tanks

Pumping arrangements

Oil fuel arrangements

Cargo oil pumping arrangements

Air receivers

Donkey boilers

Dates of examination of principal parts:—

Fitting of stern tube

Fitting of propeller

Completion of sea connections

Alignment of crankshaft in main bearings 3. 10. 57

Engine chocks & bolts

Alignment of gearing

Alignment of straight shafting

Testing of pumping arrangements

Oil fuel lines

Donkey boiler supports

Steering machinery

Windlass

Date of Committee

TUESDAY 26 AUG 1958

Special Survey Fee

DM 1645.-

Decision

See Rpt. 1.

Test bed trial

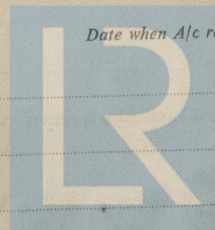
DM 100.-

Expenses

DM 60.-

Date when A/c rendered

4a 6559
9-12-57



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Rpt. 4c

Date of writing

Survey held at

FI

Name of Ship

(Or Contract)

Ship Built at

Auxiliary Engine

Total No. of

INTERNAL

2 or 4 stroke

Fuel Ga.

crankshafts

per engine

used for Be

crankcase ex

Pistons

SHAFTING

inner edges

minimum ten

thickness

weights fitted

Has each en

governing te

Date of app

Particulars

Port and No

AUXILIAR

Arrangemen

(A small diagram

attached showing

No. of air co

Material of

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attached?

Date of app

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Is this mach

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Expenses

Date when a

Declaration

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