

Rpt. 4b

Date of writing report

Received London

121 JUL 1958

Port

of Antwerp

No.

33750

Survey held at

Bruges

No. of visits

In shops

First date

14.1.1958

Last date

16.6.1958

On vessel

15

FIRST ENTRY REPORT ON INTERNAL COMBUSTION MACHINERY

No. in R.B. _____ Name M.V. "JANAKI" Gross tons _____

Owners Malabar Steamship Co. Managers _____ Port of Registry _____ Year _____ Month _____

Hull built at Bruges By Chantiers Navals de Bruges Yard No. C234 When 1958 6

Main Engines made at Hamburg By Machinenfabriek Augsburg Eng. No. 405.209 When 57.11

Gearing made at Augsburg By Zahnradfabrik Renk A.G. Blr. Nos. _____ When _____

Donkey boilers made at none By _____ When _____

Machinery installed at Bruges By Chantiers Navals de Bruges When _____

Particulars of restricted service of ship, if limited for classification Not to be operated continuously below a tentative limit of 85 R.P.M. (Engine)

Particulars of vegetable or similar cargo oil notation, if required none *not required for classification purposes see letter Aug. 1958*

Is ship to be classed for navigation in ice? No Is ship intended to carry petroleum in bulk? No

Is refrigerating machinery fitted? yes If so, is it for cargo purposes? No Type of refrigerant --

Is the refrigerating machinery compartment isolated from the propelling machinery space? no Is the refrigerated cargo installation intended to be classed? no

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 _____ No. of propellers _____ Brief description of propulsion system _____

MAIN RECIPROCATING ENGINES. Licence Name and Type No. _____

No. of cylinders per engine _____ Dia. of cylinders _____ stroke(s) _____ 2 or 4 stroke cycle _____ Single or double acting _____

Maximum approved BHP per engine 1680 at 275 RPM of engine and 139 RPM of propeller.

Corresponding MIP _____ (For DA engines give MIP top & bottom) Maximum cylinder pressure _____ Machinery numeral 336

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? _____

FOUR STROKE ENGINES. Is the engine supercharged? yes Are the undersides of the pistons arranged as supercharge pumps? _____ No. of exhaust gas driven blowers per engine one No. of supercharge air coolers per engine _____ Supercharge air pressure _____ Can engine operate without supercharger? _____

TWO & FOUR STROKE ENGINES-GENERAL. 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 FW Pistons _____ Fuel valves Fuel 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? Sealing How is the engine started? _____

Can the engine be directly reversed? yes 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 15/8/58 State barred speed range(s), if imposed 391 M

for working propeller hil For spare propeller _____ 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 _____

If shrunk, radial thickness around eyeholes _____ Are dowel pins fitted? _____ Crankshaft material Journals _____ Minimum _____

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) _____

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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.)

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
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 shaft 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 S.M. steel
Minimum approved tensile strength 44 Kgs/mm² Diameter of screwshaft cone at large end 265 m/m Is screwshaft fitted with a continuous liner? yes
Diameter of tube shaft. (If these are separate shafts) Is tube shaft fitted with a continuous liner in way of stern tube Thickness of screwshaft liner at bearings 16 m/m Thickness between bearings 12,5 m/m Material of screw/tube shaft S.M. Steel Minimum approved tensile strength 44 Kgs/mm²
Is an approved oil gland fitted? No If so, state type Length of bearing next to and supporting propeller 1080 m/m
Material of bearing lignum vitae 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 3200m/m Pitch 3300 m/m Built up or solid Solid Total developed surface 4,34 m²
No. of blades 4 Blade thickness at top of root fillet 100m/m Blade material Special manganese Bronze Moment of inertia of dry propeller 4610 Kg/m² (GD)
If propeller is of special design, state type No Is propeller of reversible pitch type? No If so, is it of approved design?
State method of control Material of spare propeller bronze Moment of inertia 4647 Kg/m² (GD)
Can they be declutched? ---

AIR COMPRESSORS & RECEIVERS. No. of main engine driven compressors per engine None Can they be declutched? ---
No. of independently driven air compressors. (State capacity, prime mover, position in ship, and Port and No. of certificate) Three. One, 51m³/h, attached to diesel generator Port Side M.E.R. forwd. Kiel Cert. No. 57/2284 - One 25m³/h, elec. driven Starbd. Side of M.E.R. aft. Hamburg Cert. No. 57/60
One hand emergency compressor 1800 l/h, Starboard side after, Kiel Cert. no. 58/2530.

No. of starting air receivers. (Main and Aux. State capacity of each, position in ship and Port and No. of Certificate) Two of 800 lit. each - Stbd. side aft. Hamburg Cert. No. 57/869.
One of 80 lit. Stbd. side aft. M.E. room Augsburg Cert. No. 58/5966
How are receivers first charged? By hand driven compressor Maximum working pressure of starting air system 30 Kgs/cm² Are the safety devices in accordance with the Rules? yes Has the starting of the main engines been tested and found satisfactory? yes

COOLERS. No. of main engine fresh water coolers One 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 Two in casing of M.E.R.

MAIN ENGINE DRIVEN PUMPS (No. and Purpose) Hamburg Rpt. 4b N° 6107.

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										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
Bilge pump, Stbd. side M.E.R. Elec. dr. 40 m ³ /h	X	X	X		X	X							X		
General Service pump Stbd. side Elec. dr. 60m ³ /h.	X		X		X	X							X		
Oil fuel transf. pump Stbd. side el. dr.				X								X			
Lubr. Oil pump for reduction gear Stbd. side El. dr.								X						X	
Salt water circulating pump for M.E. P.S. forwd. El. dr.						X				X					
Fresh water cooling pump for M.E. Port Side forwd. el. dr.					X						X				
Spare lub. oil pump for ME. Port side forwd. El. dr.								X						X	
Harbour S.W. cooling pump Port side Outboard El. dr.						X				X					
Spare harbour S.W. cooling pump, Port Side Outboard El. dr.						X				X					
Emergency fire pump Tunnel after Diesel Eng. dr.					X								X		

BILGE SUCTIONS. No. and size in each hold, deep tank or pump room No.1 Hold 82m/m x2 No.2 hold 70m/m x 2

No. and size connected to main bilge line in main engine room 51 m/m x 2 In tunnel 70m/m x 2
In aux. engine room Size and position of direct bilge suction in machinery spaces Portside Forwd. 100 m/m x 1
51m/m x 1 Stbd. side aft 94m/m x 1 Size and position of emergency bilge suction in machinery spaces Port side forwd. 100 m/m x 1
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 ships carrying petroleum in bulk, cargo oil or classed for navigation in ice? (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)
One Port Side	W5V 17.5/22A	MAN AG.	Augs. Rpt. 1073	One generator 80 KW. One air compressor 51m ³ /h
One Port Side	AAL 514	AD. Steuwer GmbH.	Ham. Cert. 57/2599	One generator 25 KW.
One Starbd. Side	W5V 17.5/22A	MAN. AG.	Augs. Rpt. 1073	One generator 80 KW.

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. One 80 KW generator
Is an electric generator driven by Main Engine? No

STEAM INSTALLATION. No. of donkey boilers burning oil fuel none 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) Two electric motors Hugh. S. Scott & Co.
Two hydr. pump Type Donkin. Two rams type Donkin. New. Castle-on-Tyne Certificate No. 69-597
Have the Rule Requirements for fire extinguishing arrangements been complied with? yes Brief description of arrangements One sand box 2 hydrants with hoses 3 fog nozzles, three 2 gallon foam extinguishers
Two 5 Kgr. CO2 extinguishers - Two 10 gallon foam extinguishers. Emergency fire pump in tunnel

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 One day 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).

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 machinery has been installed on board under the special survey of the Society's Surveyors in accordance with the Rules, the approved plans and the Secretary's letters. The materials and workmanship are good. The machinery was tried during basin and sea trials under full load working conditions with satisfactory results, and is eligible in our opinion to be classed in the Register Book with a record of LMC. 6.58 and notation TS.CL.

NOTE:- The two aux. internal combustion engine generator sets Nos. 301067/068 (see Augsburg Rpt. No. 1073 and the harbour internal combustion engine generator set No. 23626 (see Ham. Cert. No. 57/2599) have been fitted on board in a proper manner and found satisfactory when tested on the 4th June 1958 under full working conditions. No Gear Hammer was noticed during the sea trials under steady equilibrium condition of operation of the Main Engine. A notice board has been fitted to the control station of the M.E. stating that the engine is not to be operated continuously below a tentative limit of 85 R.R.M.

for M.G. Valckeneers and self.

M. JOOS.

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

INTERMEDIATE SHAFTS

SCREW AND TUBE SHAFTS

PROPELLERS

OTHER IMPORTANT ITEMS

Intermediate shaft: 2) Lloyds DTM. 920 HAB. 21.9.57 Cert. 57/1113 Messrs. Hutteunion AG. Dortmund-Hörde.

" : 3) Lloyds DTM. 865 J.L. 11.9.57 Cert. 57/1114

Spare Propeller: A.No. 91942 Lloyds HAM. 19/58 H.ka. 15.1.58 Messrs. Theodor Zeise Hamburg-Altona.

Spare Screw shaft: Lloyds DTM. HD. 29-13.11.57 HAM. 27.2.58 EA. Cert. 58/ 5.59 Messrs. Theodor Zeise Hamburg-Altona.

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 11/12/57

Gearing

Clutch

Separate oil fuel tanks

24/7/57

Pumping arrangements

24/7/57

Oil fuel arrangements

24/7/57

Cargo oil pumping arrangements

Air receivers

Donkey boilers

Dates of examination of principal parts:-

Fitting of stern tube

27/1/58

Fitting of propeller

30/1/58

Completion of sea connections

23/1/58

Alignment of crankshaft in main bearings

Engine checks & bolts

25/3/58

Alignment of gearing

25/3/58

Alignment of straight shafting

25/3/58

Testing of pumping arrangements

4/6/58

Oil fuel lines

8/5/58

Donkey boiler supports

Steering machinery

4/6/58

Windlass

4/6/58.

TUESDAY 26 AUG 1958

Date of Committee

Decision

See Rpt. 1.

Special Survey Fee

Installation fee of engines

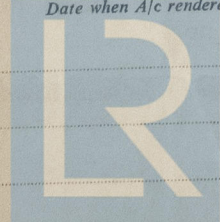
13350.-

Expenses

Rs 3495.-

Date when A/c rendered

18-7-1958



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