

30 AUG 1960

RPT. 4D	5/9.
Date of writing report	19/8 -60.
Survey held at	Åmål
K.D.	
D.M.	

Received London 19/8 -60. Port Gothenburg No. 26079.
 In shops First date 23/5-60 Last date 13/7 -60.
 No. of visits On vessel 9

FIRST ENTRY REPORT ON INTERNAL COMBUSTION MACHINERY

No. in R.B. Name "R O S P I G G E N" Gross tons 345
 Owners Rederi Grisslehamn-Åland Managers T. Jansson Port of Registry Grisslehamn Year Month
 Hull built at Åmål By A-B. Åsi-Verken Yard No. 54 When 1960-7
 Main Engines made at Berlin By Daimler-Benz A.G. Eng. No. 000937 - 938 When 1960-4
000946 - 947
 Gearing made at By Blr. Nos. When
 Donkey boilers made at By When 1960-7
 Machinery installed at Åmål By A-B. Åsi-Verken
 Particulars of restricted service of ship, if limited for classification For service between harbours in the Stockholm Archipelago and the Åland Islands.

Particulars of vegetable or similar cargo oil notation, if required
 Is ship to be classed for navigation in ice? Yes Is ship intended to carry petroleum in bulk? 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 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 Four No. of propellers One Brief description of propulsion system

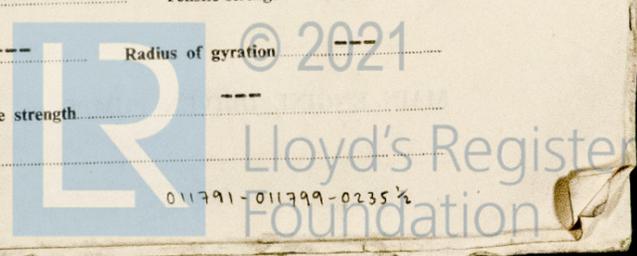
MAIN RECIPROCATING ENGINES. Licence Name and Type No. Daimler-Benz MB 846 A
 No. of cylinders per engine Dia. of cylinders stroke(s) 2 or 4 stroke cycle Single or double acting
 Maximum approved BHP per engine at 1500 RPM of engine and 400 RPM of propeller.
 Corresponding MIP (For DA engines give MIP top & bottom) Maximum cylinder pressure Machinery numeral 180
 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? 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?

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 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? Built-up seating How is the engine started? Electrically
 Can the engine be directly reversed? 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 State barred speed range(s), if imposed for working propeller 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
 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)



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 _____ 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 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 Belt - driven.

Can the main engine be used for purposes other than propulsion when declutched? Yes If so, what? For generator.

STRAIGHT SHAFTING. Diameter of thrustshaft. 160/138 mm. Material S.M. Steel Minimum approved tensile strength 49.4 kg/mm²

Shaft separate or integral with crank or wheel shaft? Separate Diameter of intermediate shaft 140 mm. Material S.M. Steel

Minimum approved tensile strength 48.1 kg/mm² Diameter of screwshaft cone at large end 160 mm. 1/100 of length 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 _____

Thickness between bearings _____ Material of screwshaft S.M. Steel Minimum approved tensile strength 44.2

Is an approved oil gland fitted? Yes If so, state type Cederwall Length of bearing next to and supporting propeller 675 mm.

Material of bearing White metal 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 1875 mm. Pitch _____ Built up or solid Built up Total developed surface 1.23 m²

No. of blades Three Blade thickness at top of root fillet 320 mm. radie Blade material S.M. Steel Moment of inertia of dry propeller 450 kg/m²
540 kg/m²

If propeller is of special design, state type _____ Is propeller of reversible pitch type? Yes If so, is it of approved design? Yes

State method of control pullrod Material of spare propeller None Moment of inertia _____

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) None.

No. of starting air receivers. (Main and Aux. State capacity of each, position in ship and Port and No. of Certificate) None.

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? Yes.

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 None.

MAIN ENGINE DRIVEN PUMPS (No. and Purpose) _____

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	Piston Cooling
All el. driven															
Bilge, fwd. aux. eng. room	X	X	X			X									
" aft " " " "	X	X	X			X									
Sanitary, stbd. side, forward aux. engine room						X							X		
Sanitary, stbd. side, aft aux. engine room						X							X		

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 1 x 2 1/2" In tunnel _____

In aux. engine rooms Forward: 2 x 2 1/2", Aft: 2 x 2 1/2" Size and position of direct bilge suction in machinery spaces 1 x 2 1/2"

S.S. aft main E.R. 1 x 3" at CL forw. aux. room Size and position of emergency bilge suction in machinery spaces 1 x 4" port side forward Main E.R.
1 x 3" stbd. side forward aux. room

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 NO

~~_____~~ (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)
Aux. eng. room	HB 3 MA	Messrs. Lister Blackstone Mar. Ltd.	Bristol SC 8766 <u>3 cyl</u>	DC Generator 22 kW.
Funnel	HB 2 MA		Bristol SC 8763 <u>2 cyl</u>	" " 8 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 Is an electric generator driven by Main Engine? Yes

STEAM INSTALLATION. No. of donkey boilers burning oil fuel None W.P. _____ Type _____

Position Port side forward in aux. engine room.

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? No Are any steam pipes over 3 ins. bore? No 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 None No. of Evaporators None

STEERING GEAR. (State No. and Type of Steam Engines, Electric Motors, Hydraulic Pumps and other particulars) One - Two cyl. hydraulic, Maker: Seffle motorverkstads A-B. No.42 Type H 2040

Have the Rule Requirements for fire extinguishing arrangements been complied with? Yes Brief description of arrangements 1 x 9 litre. CO₂, 2 x 45 litres skum, 1 x 9 litres skum. Foamite-Kustos

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-over sea trials of main engines 13/7/60 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).

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 auxiliary engines have been securely fitted in the vessel under my inspection and to my satisfaction and have been tested under full power conditions on a trial trip and found in order.

All pumps used for essential service have been inspected and tested as per Rule.

Copy of Berlin Report No.7 is herewith returned.

Recommendations:-

The machinery of this ship is eligible to be classed +LMC 7,60

Screw Shaft fitted with OG.

Note:- At the Builders' request survey was carried out by the undersigned on Monday the 11th July, 1960, between 19³⁰ - 22⁰⁰.

[Signature]
 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 ~~FOR FOR SHIP~~

FLYWHEEL SHAFT

THRUSTSHAFT Lloyd's GOT No.2411 SG 20.6.60.

GEARING

INTERMEDIATE SHAFTS Lloyd's GOT. No.2188 S.G. 20.6.60

SCREW ~~SHAFT~~ SHAFTS Lloyd's GOT. No.2198 OS 7.6.60

PROPELLERS Lloyd's GOT. No.3421 OS 7.6.60 *Blades 354-356.*

OTHER IMPORTANT ITEMS

Is the installation a duplicate of a previous case? No Yes If so, state name of vessel

Date of approval of plans for crankshaft 13/11-53 Straight shafting 9/6-60 & 7/7-60 Gearing --- Clutch ---

Separate oil fuel tanks --- Pumping arrangements 7/4-60 Oil fuel arrangements 7/4-60

Cargo oil pumping arrangements --- Air receivers --- Donkey boilers ---

Dates of examination of principal parts:-

Fitting of stern tube 7/6-60 Fitting of propeller 9/6-60 Completion of sea connections 7/6-60 Alignment of crankshaft in main bearings ---

Engine chocks & bolts 12/7-60 Alignment of gearing --- Alignment of straight shafting 1/7-60 Testing of pumping arrangements 13/7-

Oil fuel lines --- Donkey boiler supports --- Steering machinery 13/7-60 Windlass 13/7-60

Date of Committee FRIDAY 30 SEP 1960 *See Rpt. 1* Special Survey Fee Dur. inst. Kr. 750

Decision Spec. att. fee:- Kr. 70

Expenses Kr. 385:-

Date when A/c rendered 26/8-60.

