

RPT 4D  
5/9  
Date of writing report  
Survey held at  
K.D.  
D.M.

19/8 -60.

Received London

Port Gothenburg

No. 26079.

In shops

No. of visits

On vessel 9

First date

23/5-60

Last date

13/7 -60.

# 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  
Gearing made at By Blr. Nos. --- When ---  
Donkey boilers made at By A-B. Åsi-Verken When 1960-7  
Machinery installed at Åmål  
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

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

Webbs 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. Tensile strength.

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/mm<sup>2</sup>

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/mm<sup>2</sup>. Diameter of screwshaft cone at large end 160 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. Thickness between bearings. Material of screwshaft S.M. Steel. Minimum approved tensile strength 44.2 kg/mm<sup>2</sup>.

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 86 mm. at. Built up or solid Built up. Total developed surface 1.23 m<sup>2</sup>

No. of blades Three. Blade thickness at top of root fillet 320 mm. Blade material S.M. Steel. Moment of inertia of dry propeller 450 kg/m<sup>2</sup>.

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? None.

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<br>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 |
| 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? 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   | HE 3 MA | Messrs. Lister Blackstone Mar. Ltd. | Bristol SC 8766               | DC Generator 22 kW.                                      |
| Funnel           | HE 2 MA |                                     | Bristol SC 8763               | " " 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. 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. CO<sub>2</sub>, 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 19<sup>30</sup> - 22<sup>00</sup>.

*[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 PROPELLER SHAFT~~

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 ~~AND TUBE~~ SHAFTS Lloyd's GOT. No.2198 OS 7.6.60

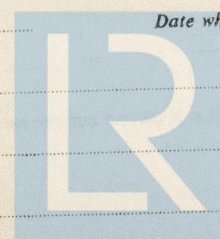
PROPELLERS Lloyd's GOT. No.3421 OS 7.6.60 *Blades 35x-356.*

OTHER IMPORTANT ITEMS

Is the installation a duplicate of a previous case? No 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 13/7-60  
Oil fuel lines --- Donkey boiler supports --- Steering machinery 13/7-60 Windlass 13/7-60  
Date of Committee FRIDAY 30 SEP 1960  
Decision *See Rpt. 1.* Special Survey Fee Dur. inst. Kr. 750  
Spec. att. fee:- Kr. 70

Expenses Kr. 385:-

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



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