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Rpt. 4b

26 APR 3

Date of writing report 21st Dec., 1962 Received London - Port of Augsburg No. 1643  
 Survey held at Augsburg No. of visits 15 In shops 6th September, 62 23rd November, 1962  
 On vessel - First date - Last date -

# FIRST ENTRY REPORT ON INTERNAL COMBUSTION MACHINERY

No. in R.B. 80882 Name IRENE EX SEAHORSE Gross tons -  
 Owners Venetsanos, Piräus/Greece Managers - Port of Registry - Year - Month -  
 Hull built at - By - Yard No. - When -  
 Main Engines made at Augsburg By M.A.N. A.G. Eng. No. 402 855 When 1962  
 Gearing made at - By - Gear No. - When -  
 Aux./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 -  
 If ship is to be classed for navigation in ice, state whether Class 1, 2 or 3 - Is ship an oil tanker? -  
 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 one No. of propellers one Brief description of propulsion system direct propulsion

## MAIN RECIPROCATING ENGINES. Licence Name and Type No. G6V30/45 supercharged

No. of cylinders per engine 6 Dia. of cylinders 300 mm stroke(s) 450 mm 2 or 4 stroke cycle 4 Single or double acting single  
 Maximum BHP per engine approved for this installation 875 at 400 RPM of engine and 400 RPM of propeller.  
 Corresponding MIP 12.37 kg/cm<sup>2</sup> (For DA engines give MIP top & bottom) Maximum cylinder pressure 62-65 kg/cm<sup>2</sup> Machinery numeral -  
 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? 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 one Supercharge air pressure 0.42 kg/cm<sup>2</sup> Can engine operate without supercharger? yes

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 - Is the engine equipped to operate on heavy fuel oil? Diesel oil

Cooling medium for: Cylinders water Pistons oil Fuel valves fuel oil Overall diameter of piston rod for double acting engines -

Is the rod fitted with a sleeve? no Is welded construction employed for: Bedplate? no Frames? - Entablature? - Is the crankcase separated from the underside of pistons? no Is the engine of crosshead or trunk piston type? trunk piston Total internal volume of crankcase 2.625 m<sup>3</sup> No. and total area of explosion relief devices 5; 81 cm<sup>2</sup> each Are flame guards or traps fitted to relief devices? no Is the crankcase readily accessible? yes If not, must the engine be removed for overhaul of bearings, etc? no Is the engine secured directly to the tank top or to a built-up seating? - How is the engine started? by air

Can the engine be reversed? yes ~~How~~ how is reversing obtained? pneumatic-hydraulic

Has the engine been tested working in the shop? yes How long at full power? 12 hrs.

## CRANK & FLYWHEEL SHAFTING. Date of approval of torsional vibration characteristics of the propelling machinery system 22.1.1963 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? opposite coupling side Type "Hülsenfeder" damper No. of main bearings 7 Are main bearings of ball or roller type? -

Distance between inner edges of bearings in way of crank(s) 388 mm Distance between centre lines of side cranks or eccentrics of opposed piston engines -

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

Diameter of journals 205 mm Diameter of crankpins Centre 205 mm Breadth of webs at mid-throw 375x446.67 mm Axial thickness of webs 98 mm

If shrunk, radial thickness around eyeholes - Are dowel pins fitted? no Crankshaft material: Journals S.M. Steel Minimum 55 kg/mm<sup>2</sup>

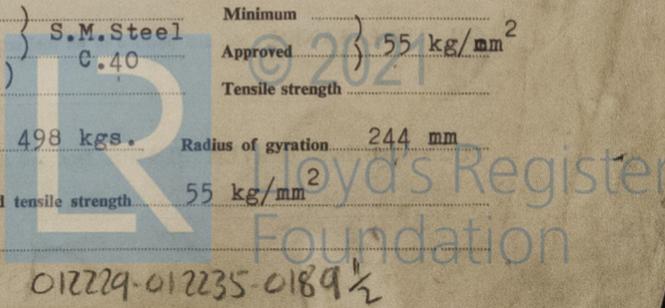
Webbs C.40 Tensile strength -

Diameter of flywheel 1200 mm Weight 2360 kgs. Are balance weights fitted? yes Total weight 498 kgs. Radius of gyration 244 mm

Diameter of flywheel shaft 170 mm Material S.M. Steel, C.35 Minimum approved tensile strength 55 kg/mm<sup>2</sup>

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

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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. 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 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 liner at bearings

Thickness between bearings How is the after end of the liner made watertight in the propeller boss?

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. If of special design, state type Is it of reversible pitch type?

If so, is it of approved design? State method of control

Table with columns: 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)

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) 2 x 350 ltrs. Augsburg Certificates:-

63/202 - 62/1929 ; 63/201 - 62/1928

How are receivers first charged? Maximum working pressure of starting air system 30 kg/cm<sup>2</sup> 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 No. of main engine lubricating oil coolers 1 x 12 m<sup>2</sup>

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 centrifugal double pump

1 centrifugal pump

1 lubricating oil pump: 14 m<sup>3</sup>/h

Table for INDEPENDENT PUMPS with columns for SUCTION (Bilge Main, Bilge Direct, Ballast Main, Oil Fuel, Fresh Water Cooling, Sea, Feed Tanks, Lub. Oil) and DELIVERY (Boiler Feed, Salt Water Cooling, Fresh Water Cooling, Oil Fuel Tanks, Fire Main, Lub. Oil, Piston Cooling)

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 oil tankers, ships carrying cargo oil or classed for navigation in ice Class 1, 2 or 3? (Strike out words not applicable.)

STEAM & OIL ENGINE AUXILIARIES

Table with columns: Position of each, Type, Made by, Port and No. of Rpt. or Cert., Driven Machinery (For electric generators, state output)

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 aux./donkey boilers burning oil fuel W.P. Type

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)

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.)

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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 oil main engine has been constructed under special survey in accordance with the requirements of the Rules and otherwise with the approved plans. The material used was tested and the workmanship was found satisfactory.

The engines were tested running on maker's test bed under full-, over-, and partial loads with satisfactory results.

In my opinion the engine can be recommended for the notation  L.M.C. (with date) when the whole machinery has been satisfactorily fitted on board and tried under full working conditions.



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 LLOYD'S AUG 1661 LR 16.10.62 G.Fi. 402 855

CRANKSHAFT ~~BY ROTORSHIP~~ LLOYD'S AUG 1661 8400A G.H. 1.10.62  
LLOYD'S AUG 1661 137A - 29.10.62 GH

FLYWHEEL SHAFT

THRUSTSHAFT

GEARING

INTERMEDIATE SHAFTS

SCREW AND TUBE SHAFTS

PROPELLERS

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 18.6.57 Straight shafting 30.10.62 Hamburg Gearing 7.12.62 London Clutch

Separate oil fuel tanks Pumping arrangements Oil fuel arrangements

Cargo oil pumping arrangements Air receivers Aux./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 24.10.62

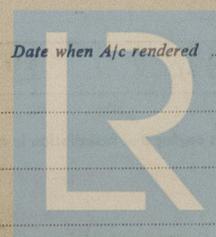
Engine chocks & bolts Alignment of gearing Alignment of straight shafting Testing of pumping arrangements

Oil fuel lines Donkey boiler supports Steering machinery Windlass

Date of Committee Decision Special Survey Fee DM 869.-  
1 crankshaft DM 80.-  
1 running test DM 120.-

Expenses 30.-  
Total ... DM 1099.-

Date when A/c rendered 19.4.1963



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