

29.4.61  
Date of writing report.....  
Survey held at.....  
Karlovac

No. of visits ..... 16

First date 18.5.60

1207

NO. 5.4.61

Last date 17.4.61

16. JUN. 1961

16. *Handwritten text, possibly a date or page number.*

127/59

Name of Ship.....  
(Or Contract No. if name unknown).

Ship Built at..... Rijeka..... by..... 3. Maj..... when..... Yard No. 480

Auxiliary Engines or Gas Turbines made at..... Karlovac..... by..... Jugoturbina..... when 1961..... Eng. Nos. M-110-111

Total No. of sets and description (including type name) 2 Sets Jugoturbina - Sulzer Type 5BAH29

INTERNAL COMBUSTION RECIPROCATING ENGINES. No. of cylinders per engine 5 Dia. of cylinders 290 mm Stroke 360 mm  
2 or 4 stroke cycle four Maximum approved BHP 500 at 500 RPM Corresponding MIP 11 kg/sq. cm Maximum pressure 60 kg/sq. cm  
Fuel Marine Diesel Oil Are cylinders arranged in Vee or other special formation? In line If so, No. of  
crankshafts per engine one Is engine of opposed piston type? no No. and type of mechanically driven scavenge pumps or blowers  
per engine none No. of exhaust gas driven blowers or superchargers per engine one Is welded construction  
used for: Bedplate? no Entablature? no Total internal volume of crankcase (if 20 cu. ft. or over) 2.6 cu. m. No. and total area of  
crankcase explosion relief devices 5x0,0113 sq. m. Are flame guards or traps fitted? no Cooling medium for: Cylinders fresh water  
Pistons no cooling No. of attached pumps: F.W. cooling none S.W. cooling none Lubricating oil one How is engine started? with  
compressed air of max. 30 kg/sq. cm.

**SHAFTING.** Is a damper or detuner fitted? no No. of main bearings 6 Are bearings of ball or roller type? no Distance between inner edges of bearings in way of cranks 338 Crankshaft: Built, semi-built, solid. Material of crankshaft MF. Steel Approved minimum tensile strength 50 kg./sq. mm Dia. of pins 185 mm Journals 200 mm Breadth of webs at mid throw 295 mm Axial thickness 92 mm If shrunk, radial thickness around eyeholes - Dia. of flywheel 1500 mm Weight 1350 kg. Are balance weights fitted? no Total weight - Rad. of gyration - Dia. of flywheel shaft 200 mm

Has each engine been tested in shop? yes How long at full power? 6 hours Was it tested with driven machinery attached? yes Was the governing tested and found satisfactory? yes Date of approval of torsional vibration characteristics (for engines of 150 BHP and over) 6.12.60

Date of approval of shafting 19/12/60 Identification marks on shafting Lloyd's Rka. No. 6528-22.6.60.JR. Lloyd's KLN & R 563 2.12.57.RM.

Particulars of driven machinery Rade Koncar AC. Self Exciting Generator SC 1126-12 of 400KVA.; Works No. 11686 & 11688; Lloyd's Rka. No. 8623 VS 28.2.61.VS & Lloyd's Rka. No. 8521 14.2.61.

Port and No. of Certificate for Starting Air Receivers 1/1

**AUXILIARY GAS TURBINES.**      BHP per set..... At..... RPM of output shaft. Open or closed cycle?.....

Arrangement of turbines.      HP drives..... at..... RPM      HP gas inlet temp..... pressure.....

IP      "..... at..... "      IP      "      "      "..... ".....

(A small diagram should be attached showing gas cycle)      LP      "..... at..... "      LP      "      "      "..... ".....

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?..... Are the turbines operated in conjunction with free piston gas generators?.....

Total No. of free piston gas generators..... Dia. of working pistons..... Dia. 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 in shop?..... How long at full power?..... Were they tested with driven machinery

attached?..... Particulars of gearing.....

Date of approval of plans..... Identification marks..... Particulars of driven machinery.....

**ELECTRIC GENERATORS.** Port and No. of Certificate for generators of 100 Kw. and over.....  
 For generators under 100 Kw., has Makers' Certificate been obtained?..... Are Certificates attached?.....

The foregoing description is correct and the particulars are as approved for torsional vibration characteristics (strike out words not applicable)

*Is this machinery duplicate of a previous case?..... If so, which?*

**GENERAL REMARKS.** State if the machinery has been constructed under special survey in accordance with the Rules, approved plans and Secretary's letters. State quality of materials and workmanship. Where existing machinery is submitted for classification the circumstances should be explained as fully as possible.

The auxiliary engines referred herein have been constructed under Special Survey in accordance with the Rules of the Society's Approved plans and Secretary letters.

The material and workmanship are good.

On completion the engines were examined under full power condition on the test bed with satisfactory results and are in my opinion suitable for installation in a ship classed with the Society.

Survey Fee € 68-0-0 + 142800.-Din.

Expenses 23754. - Din.

Date when a/c rendered.

(J. Racki)

Engineer Surveyor to Lloyd's Register

Declaration to be signed by Surveyor at fitting-out Port:— The above described machinery has been fitted on board the M.V. "JOZEF CONRAD"  
at Rijeka in a proper manner and found satisfactory when tested on the (date) 3.11.61 under full working conditions.

F. G. Burn

Engineer Surveyor to Lloyd's Register

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