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of writing report 15.2.60. Received London HELSINGFORS No. 7343  
held at Vasa In shops 78 Port 10.10.58 First date 10.12.59  
No. of visits On vessel Last date

# RST ENTRY REPORT ON INTERNAL COMBUSTION MACHINERY

R.B. 19598 Name "LENINGRAD" Gross tons 9425,2  
U.S.S.R. Managers Wärtsilä-koncernen Ab, Port of Registry Murmansk  
Helsingfors By Sandvikens-Skeppsdocka Yard No. 366 Year 1961 Month 11  
Engines made at Vasa By Wärtsilä-koncernen Ab, Eng. No. 186 When 1959  
Wasa Mekaniska Verkstad  
By  
By  
By

Particulars of restricted service of ship, if limited for classification  
Particulars of vegetable or similar cargo oil notation, if required  
Is ship intended to carry petroleum in bulk?  
Is so, is it for cargo purposes? Type of refrigerant  
Is the refrigerated cargo installation intended to be classed?

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  
ling 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  
rt need not be repeated below, but the port and report number should be stated.

of main engines No. of propellers Brief description of propulsion system Diesel electric  
MAIN RECIPROCATING ENGINES. Licence Name and Type No. Wärtsilä-Sulzer 9MH51/55  
of cylinders per engine 9 Dia. of cylinders 510 mm stroke(s) 550 mm 2 or 4 stroke cycle 2 Single or double acting single  
Maximum approved BHP per engine 3250 at 330 RPM of engine and RPM of propeller.  
responding MIP 5,3 kg/mm<sup>2</sup> (For DA engines give MIP top & bottom) Maximum cylinder pressure 65 kg/cm<sup>2</sup> Machinery numeral  
the cylinders arranged in Vee or other special formation? no If so, number of crankshafts per engine -

O STROKE ENGINES. Is the engine of opposed piston type? no If so, how are upper pistons connected to crankshaft? -  
he exhaust discharged through ports in the cylinders or through valve(s) in the cylinder covers? ports in cyl. No. and type of mechanically driven scavenge pumps or blowers per  
ne and how driven 9 lever driven scavenge pumps (piston pumps)  
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?  
stand-by or emergency pump or blower is fitted, state how driven No. of scavenge air coolers Scavenge air pressure at full  
er. Are scavenge manifold explosion relief valves fitted?

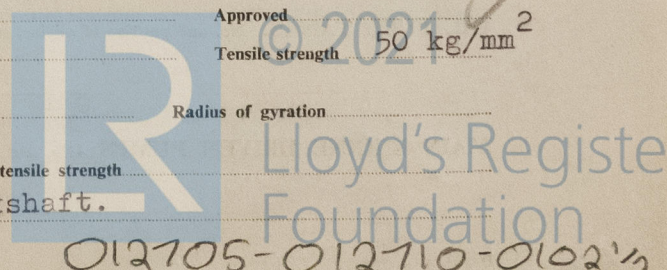
UR STROKE ENGINES. Is the engine supercharged? Are the undersides of the pistons arranged as supercharge pumps? No. of exhaust gas driven blowers per  
ine. No. of supercharge air coolers per engine Supercharge air pressure Can engine operate without supercharger?

O & FOUR STROKE ENGINES-GENERAL. No. of valves per cylinder: Fuel 1 Inlet - Exhaust - Starting 1 Safety 1  
terial of cylinder covers cast steel Material of piston crowns Forged steel Is the engine equipped to operate on heavy fuel oil? no  
lubricating medium for: -Cylinders fresh water Pistons oil Fuel valves fresh water Overall diameter of piston rod for double acting engines -  
he rod fitted with a sleeve? - Is welded construction employed for: Bedplate? no Frames? no Entablature? no Is the crankcase separated from the  
erside of pistons? no Is the engine of crosshead or trunk piston type? trunk Total internal volume of crankcase 8,5 m<sup>3</sup> No. and total area of explosion relief  
ices 9x250cm<sup>2</sup>=2250cm<sup>2</sup> Are flame guards or traps fitted to relief devices? no Is the crankcase readily accessible? yes If not, must the engine be removed for  
rhaul of bearings, etc? - Is the engine secured directly to the tank top or to a built-up seating? How is the engine started? By air  
n the engine be directly reversed? no If not, how is reversing obtained? No reversing required.  
s the engine been tested working in the shop? yes How long at full power? 8 hours

ANK & FLYWHEEL SHAFTING. Date of approval of torsional vibration characteristics of the propelling machinery system 16.4.57 Case 319 U, State barred speed range(s), if imposed  
working propeller For spare propeller Is a governor fitted? yes Is a torsional vibration damper or detuner fitted to the shafting? no

ere positioned? Type No. of main bearings 11 Are main bearings of ball or roller  
e? no Distance between inner edges of bearings in way of crank(s) 570 mm Distance between centre lines of side cranks or eccentrics of opposed piston engines -  
inkshaft type: Built, semi-built, solid (State which) solid  
meter of journals 310 Centre 310 mm Breadth of webs at mid-throw 450 mm Axial thickness of webs 163 mm  
120 mm Dia. Hals 3  
hunk, radial thickness around eyeholes Are dowel pins fitted? Crankshaft material Journals Pins Minimum  
Webs Tensile strength 50 kg/mm<sup>2</sup>

meter of flywheel Weight Are balance weights fitted? Total weight Radius of gyration  
meter of flywheel shaft Material Minimum approved tensile strength  
wheel shaft: separate, integral with crankshaft, integral with thrustshaft. (State which) Integral with crankshaft.



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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, 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 Diesel Engine has been constructed under Special Survey in accordance with the Rules, approved plans and Secretary's letters. Quality of materials and workmanship found good.

*J. M. S.*  
Engineer Surveyor to Lloyd's Register of Ships

## PARTICULARS OF IDENTIFICATION MARKS ((Including Port of origin) of important Forgings and Castings. (Copies of certificates should be forwarded with report.)

RODS Lloyd's DSF HS 121 4.9.58 (3 pice) Lloyd's DSF HS 119 4.9.58 (3 pice) Lloyd's DSF HS 122 9.9.58

## CRANKSHAFT OR ROTORSHAFT

## FLYWHEEL SHAFT

Lloyd's KLN AS 938 1.9.58

Lloyd's KLN AS 916 1.9.58

## THRUSTSHAFT

## GEARING

## INTERMEDIATE SHAFTS

## SCREW AND TUBE SHAFTS

## PROPELLERS

## OTHER IMPORTANT ITEMS

Is the installation a duplicate of a previous case? yes If so, state name of vessel Yard No. 365. Report No. 6968

Date of approval of plans for crankshaft 6.10.55 Straight shafting \_\_\_\_\_ Gearing \_\_\_\_\_ Clutch \_\_\_\_\_

Separate oil fuel tanks \_\_\_\_\_ Pumping arrangements \_\_\_\_\_ Oil fuel arrangements \_\_\_\_\_

Cargo oil pumping arrangements \_\_\_\_\_ Air receivers \_\_\_\_\_ 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 \_\_\_\_\_

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 FRIDAY 16 FEB 1962 Special Survey Fee Fmk. 267.000

Decision See H/s 8382 Expenses Fmk. 8.380:-

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Date when A/c rendered



Lloyd's Register  
Foundation