16. JAN. 1962

Rpt. 4c

Date of writing report 21.2.61 Received London ..... Port Helsingfors No. 7690

Survey held at Vasa No. of visits 30 First date 12.1.60 Last date 1.7.60

FIRST ENTRY REPORT ON AUXILIARY INTERNAL COMBUSTION ENGINES

Name of Ship "LENINGRAD" *Owners* U.S.S.R.
(Or Contract No. if name unknown). *(Or Consignees)*
Ship Built at Helsingfors *by* Wärtsilä-koncernen Ab, Sandvikens Skeppsdocka. *when* ..... *Yard No.* 366
Auxiliary Engines or Gas Turbines made at Vasa *by* Wärtsilä-koncernen Ab, Vasa Mekaniska Verkstad *when* 1960 *Eng. Nos.* 197
Total No. of sets and description (including type name) K58E

INTERNAL COMBUSTION RECIPROCATING ENGINES. *No. of cylinders per engine* 8 *Dia. of cylinders* 180 mm *Stroke* 300 mm *2 or 4 stroke cycle* 2 *Maximum approved BHP* 412 455 *at* 600 *RPM Corresponding MIP* 6.59 7.1 *Maximum pressure* 65 kg/cm² *Fuel* diesel oil *Are cylinders arranged in Vee or other special formation?* no *If so, No. of crankshafts per engine* - *Is engine of opposed piston type?* no *No. and type of mechanically driven scavenge pumps or blowers per engine* one turbo blower *No. of exhaust gas driven blowers or superchargers per engine* - *Is welded construction used for: Bedplate?* no *Entablature?* no *Total internal volume of crankcase (if 20 cu. ft. or over)* 1,2 m³ *No. and total area of crankcase explosion relief devices* 3, 600 cm² *Are flame guards or traps fitted?* no *Cooling medium for: Cylinders* Fresh water *Pistons* lub.oil *No. of attached pumps: F.W. cooling* none *S.W. cooling* none *Lubricating oil* one *How is engine started?* by air

SHAFTING. *Is a damper or detuner fitted?* no *No. of main bearings* 10 *Are bearings of ball or roller type?* no *Distance between inner edges of bearings in way of cranks* 222 mm *Crankshaft:* ~~built, semi-built,~~ solid. *Material of crankshaft* SM steel *Approved minimum tensile strength* 52 kg/mm² *Dia. of pins* 120 mm *Journals* 125 mm *Breadth of webs at mid throw* 280 mm *Axial thickness* 56 mm *If shrunk, radial thickness around eyeholes* - *Dia. of flywheel* 900 mm *Weight* 458 kg *Are balance weights fitted?* no *Total weight* - *Rad. of gyration* - *Dia. of flywheel shaft* 125 mm
Has each engine been tested in shop? yes *How long at full power?* 12 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)* 19.6.58 367 N 28/1/57
Date of approval of shafting 25.9.58 *Identification marks on shafting* Lloyds Cet No 2050 EJ 12.5.59
Particulars of driven machinery Generator
Port and No. of Certificate for Starting Air Receivers .....

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* .....
(A small diagram should be attached showing gas cycle) *IP* ,, ... *at* ..... ,, *IP* ,, ,, ,, ... ,, ...
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)
Wärtsilä-koncernen A/B
WASA MEK. VERKSTAD
..... *Manufacturer*

Is this machinery duplicate of a previous case? yes *If so, which?* 7674

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.*
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.

Survey Fee Fmk. 70.000:-
Expenses -
Date when a/c rendered 4.10.60.

..... *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 "Leningrad" *at* Helsingfors *in a proper manner and found satisfactory when tested on the (date)* 29.10.61 *under full working conditions.*

A.Weber. ..... *Engineer Surveyor to Lloyd's Register*

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