Rpt. 4c

17 NOV 1959

Date of writing report 14.11.1959 Received London ..... Port Helsingfors No. 7106

Survey held at Vasa No. of visits 28 First date 22.10.58 Last date 15.4.59

23 SEP 1960

FIRST ENTRY REPORT ON AUXILIARY INTERNAL COMBUSTION ENGINES

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

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, Wasa Mekaniska Verkstad when 1959 Eng. Nos. 193

Total No. of sets and description (including type name) K 58 E

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 Maximum pressure 65kg/cm²

Fuel Marine 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? – Entablature? – 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 lubr.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~~, 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) 28.1.57 ✓

Date of approval of shafting 25.9.58 Identification marks on shafting Lloyd's Got No.1957 EJ 20.3.59 Base 367 N

Particulars of driven machinery Siemens A.C. Generator
285 KVA, 400 V, 555 A.

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

11. 1. 60

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 ..... Particulars of driven machinery .....

Date of approval of plans ..... Identification marks .....

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
R. Öberg
..... Manufacturer

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.

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 " 8.770:-
Date when a/c rendered 26.5.59.

J. Nilsen
..... 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 Icebreaker "MOSKVA"

at Helsingfors in a proper manner and found satisfactory when tested on the (date) 11.5.60 under full working conditions.

A. Antio J. Nilsen
..... Engineer Surveyor to Lloyd's Register

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