Rpt. 4c

Date of writing report 4.4.59 Received London Port Helsingfors No. 6968

Date of last survey 27/9 No. of visits 58 First date 2.7.58 Last date 30.12.58

Main

FIRST ENTRY REPORT ON ~~AUXILIARY~~ INTERNAL COMBUSTION ENGINES

Name of Ship Icebreaker "MOSKVA" Owners (Or Consignees) USSR

(Or Contract No. if name unknown).

Ship Built at Helsingfors by Wärtsilä-koncernen Ab, Sandvikens Skeppsdocka when Yard No. 365

Auxiliary Engines or Gas Turbines made at Vasa by Wartsila-koncernen Ab, Wasa Mekaniska Verkstad when 1958 Eng. Nos. 178

Total No. of sets and description (including type name) 9MH51/55

INTERNAL COMBUSTION RECIPROCATING ENGINES. No. of cylinders per engine 9 Dia. of cylinders 510 mm Stroke 550 mm

2 or 4 stroke cycle 2 Maximum approved BHP 3250 at 330 RPM Corresponding MIP 5,3 Maximum pressure 65 kg/cm²

Fuel diesel oil Are cylinders arranged in Vee or other special formation? normal 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 9 piston pumps No. of exhaust gas driven blowers or superchargers per engine none Is welded construction

used for: Bedplate? no Entablature? no Total internal volume of crankcase (if 20 cu. ft. or over) 8,5 m³ No. and total area of

crankcase explosion relief devices 9x250 cm²=2250 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 none How is engine started? By compr.air

SHAFTING. Is a damper or detuner fitted? yes No. of main bearings 11 Are bearings of ball or roller type? no Distance between

inner edges of bearings in way of cranks 570 mm Crankshaft: ~~Built, Semi-built~~ solid. Material of crankshaft SM steel Approved

minimum tensile strength 50 kg/mm² Dia. of pins 310 mm Journals 310 mm Breadth of webs at mid throw 450 mm Axial

thickness 163 mm If shrunk, radial thickness around eyeholes - Dia. of flywheel 1330 mm Weight 432 kg Are balance

weights fitted? yes Total weight 45,8kg+25,5 kg Rad. of gyration 273mm+490mm Dia. of flywheel shaft 310 mm (included in crankshaft)

Has each engine been tested in shop? yes How long at full power? 8 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) 23.4.57

Date of approval of shafting 6.10.55 9.11.55 Identification marks on shafting LLOYDS KLN. 642 AS 3.3.58
LLOYDS KLN. 641 AS 3.3.58

Particulars of driven machinery Siemens A.C.Gene-
rator GM434/808, 2150 kW, 600 V, 3600 A.

Port and No. of Certificate for Starting Air Receivers Not yet delivered.

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?

Wärtsilä-koncernen A/B
WASA MEK. VERKSTAD

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

L. Hengrud
Manufacturer

Is this machinery duplicate of a previous case? yes If so, which? Report No. 6958.

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. 267.000:-
Expenses " 8.500:-

Date when a/c rendered 23.2.59

P. Weber
A. Weber. 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.

P. Weber
P. Antt. Engineer Surveyor to Lloyd's Register

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