Rpt. 4c

Date of writing report 4.4.59 Received London ..... Port Helsingfors No. 6958

Survey held at Helsingfors No. of visits 58 First date 24.6.58 Last date 12.12.58

FIRST ENTRY REPORT ON ~~AUXILIARY~~ Main 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 ~~XXXXXXXXXX~~ made at Vasa by Wärtsilä-koncernen Ab, Wasa Mekaniska Verkstad when 1958 Eng. Nos. 177

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/cm^2

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? – Entablature? – Total internal volume of crankcase (if 20 cu. ft. or over) 8,5 m^3 No. and total area of crankcase explosion relief devices 9x250cm^2=2250cm^2 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? no 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 (548) Crankshaft: ~~Built, semi-built,~~ solid. Material of crankshaft SM steel Approved minimum tensile strength 50kg/mm^2 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+25,5kg 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 (16)
Date of approval of shafting 6.10.55 (9.11.55) Identification marks on shafting LLOYDS KLN 668 AS 31.3.58 base 319 U
LLOYDS KLN 651 AS 31.3.58
Particulars of driven machinery Siemens D.C.Generator
GM 434/808, 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)

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. 267. 000:-
Expenses " 8.470:-
Date when a/c rendered 17.12.58

Å. 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.

Engineer Surveyor to Lloyd's Register

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