

## Rpt. 4b

Date of writing report 15.8.60 Received London Port Helsingfors No. 7650 M  
Survey held at Helsingfors No. of visits In shops First date 3.2.59 Last date 15.6.60  
On vessel 68

## FIRST ENTRY REPORT ON INTERNAL COMBUSTION MACHINERY

No. in R.B. 22669 Name "MOSKVA" Gross tons 13290  
Owners U.S.S.R. Managers U.S.S.R. Port of Registry Murmansk  
Hull built at Helsingfors, Finland By Wärtsilä-koncernen Ab, Sandvikens Skeppsdocka Yard No. 365 Year Month 1960-5  
Main Engines made at Vasa, Finland By Wärtsilä-koncernen Ab, Wasa Mek. Verkstad Eng. No. 173,174,175,176,177,178,179,180 When 1958-59  
Gearing made at By  
Donkey boilers made at Helsingfors, Finland By Wärtsilä-koncernen Ab, Maskin och Bro Blr. Nos. 2795, 2796 When 1958  
Machinery installed at Helsingfors, Finland By Wärtsilä-koncernen Ab, Sandvikens Skeppsdocka When 1958

Particulars of restricted service of ship, if limited for classification

Particulars of vegetable or similar cargo oil notation, if required

Is ship to be classed for navigation in ice? Yes Is ship intended to carry petroleum in bulk? no  
Is refrigerating machinery fitted? yes If so, is it for cargo purposes? no Type of refrigerant Freon  
Is the refrigerating machinery compartment isolated from the propelling machinery space? yes Is the refrigerated cargo installation intended to be classed?

The 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 wording 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 report need not be repeated below, but the port and report number should be stated.

No. of main engines 8 No. of propellers 3 Brief description of propulsion system Diesel-electric  
MAIN RECIPROCATING ENGINES. Licence Name and Type No. Sulzer 9MH 51/55, see my Reports Nos. 6577, 6704, 6767, 6793, 6958, 6968, 6992, 7025

No. of cylinders per engine 9 Dia. of cylinders 510 mm stroke(s) 550 2 or 4 stroke cycle 2 Single or double acting single  
Maximum approved BHP per engine 3250 at 330 RPM of engine and 115/145 RPM of propeller.  
Corresponding MIP 5.3 (For DA engines give MIP top & bottom) Maximum cylinder pressure 65 Machinery numeral M.N. 4400

Are the cylinders arranged in Vee or other special formation? no If so, number of crankshafts per engine

TWO STROKE ENGINES. Is the engine of opposed piston type? no If so, how are upper pistons connected to crankshaft?

Is the exhaust discharged through ports in the cylinders or through valve(s) in the cylinder covers? through ports No. and type of mechanically driven scavenge pumps or blowers per engine and how driven Each cylinder has a lever driven scavenging pump

No. 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?

If a stand-by or emergency pump or blower is fitted, state how driven No. of scavenge air coolers Scavenge air pressure at full power 0.24 ÷ 0.40 Are scavenge manifold explosion relief valves fitted?

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

TWO &amp; FOUR STROKE ENGINES—GENERAL. No. of valves per cylinder: Fuel one Inlet none Exhaust none Starting one Safety one

Material of cylinder covers Cast steel Material of piston crowns cast steel Is the engine equipped to operate on heavy fuel oil? no

Cooling medium for :—Cylinders Fresh water Pistons Lub. oil Fuel valves Fresh water Overall diameter of piston rod for double acting engines

Is the rod fitted with a sleeve? Is welded construction employed for: Bedplate? no Frames? no Entablature? no Is the crankcase separated from the

underside 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 reliefdevices 2250 cm<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

overhaul of bearings, etc? Is the engine secured directly to the tank top or to a built-up seating? seating How is the engine started? by air

Can the engine be directly reversed? no If not, how is reversing obtained? By reversing the current in the propelling motors.

Has the engine been tested working in the shop? yes How long at full power? 8 hours.

CRANK &amp; FLYWHEEL SHAFTING. Date of approval of torsional vibration characteristics of the propelling machinery system 23.4.57 State barred speed range(s), if imposed 15.5.57

for working propeller none For spare propeller none Is a governor fitted? yes Is a torsional vibration damper or detuner fitted to the shafting? no

Where positioned? Type No. of main bearings 11 Are main bearings of ball or roller

type? 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

Crankshaft type: Built, semi-built, solid. (State which) solid

Diameter of journals 310 mm Diameter of crankpins Centre 310 mm Breadth of webs at mid-throw 450 mm Axial thickness of webs 163 mm

If shrunk, radial thickness around eyeholes Are dowel pins fitted? Crankshaft material Journals Pins Minimum

Webs Tensile strength

Diameter of flywheel 1330 mm Weight 432 kg Are balance weights fitted? yes Total weight 45,8+25,5kg Radius of gyration 273mm+490mm

Diameter of flywheel shaft 310 mm Material Minimum approved tensile strength

Flywheel 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 and give 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.

The Machinery has been constructed and installed under Special Survey in accordance with the Rules, approved plans and Secretary's letters. The quality of the material and workmanship found good.

The Machinery is eligible in my opinion to be classed +LMC.

*A. Martin*

*J. H. Jones*

Engine Surveyor to Lloyd's Register of Shipping.

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

RODS

CRANKSHAFT OR ROTORSHAFT

FLYWHEEL SHAFTS (=crank shafts)

THRUSTSHAFTS SHF 16233 15.10.58 H.H. - SHF 16235 5.1.59 H.H. - SHF 16232 5.6.58 H.H.

GEARING

INTERMEDIATE SHAFTS SHF 16228 & 16229 20.10.58/28.1.59 H.H. - SHF 16231/15.7.58, 16222&16223/10.7.

SCREW ~~AXLE~~ SHAFTS SHF 12874/16.7.58, 12873/7.7.58, 12869/19.6.58 H.H.

PROPELLERS 3 Bosses: Abo 613, 614, 615 14.7.58 H.T. - 12 Blades: Abo 616, 617 31.7.58 AI and Abo 618, 619 14.7.58 H.T. and Abo 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631 30.7.58 AI and Abo 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000

OTHER IMPORTANT ITEMS Spare shaft for Centre Propeller: SHF 12870 22.9.58 H.H. -

Spare shaft for Wing Propellers: SHF 12878 24.3.59 H.H.

Is the installation a duplicate of a previous case?

no

If so, state name of vessel

Date of approval of plans for crankshaft

Straight shafting

29.5.58

Gearing

Clutch

Separate oil fuel tanks

Pumping arrangements

4.6.58

Oil fuel arrangements

29.1.57

Cargo oil pumping arrangements

Air receivers

Donkey boilers

21.10.57

Dates of examination of principal parts:-

Fitting of stern tube

11.12.58

Fitting of propeller

8.1.59

Completion of sea connections

8.1.59

Alignment of crankshaft in main bearings

5.6.59

Engine checks & bolts

2.7.59

Alignment of gearing

Alignment of straight shafting

21.8.59

Testing of pumping arrangements

28.4.60

Oil fuel lines

29.4.60

Donkey boiler supports

8.4.60

Steering machinery

11.5.60

Windlass

11.5.60

Date of Committee

FRIDAY 14 OCT 1960

Special Survey Fee

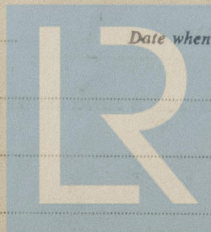
£436.800

Decision

See App. 1.

Expenses

Date when A/c rendered



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