

REPORT ON ELECTRICAL EQUIPMENT

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office

Date of writing Report 19... When handed in at Local Office 19... Port of HELSINGFORS

No. in Survey held at Helsingfors Date, First Survey 26.11.59 Last Survey 2.11.61

Reg. Book (No. of Visits 46)

19598 on the Icebreaker "LENINGRAD" Tons Gross 9425 Net 1138

Built at docks Sandvikens Skepps- By whom built Wärtsilä-koncernen AB Yard No. S 366 When built 1959-61

Owners SUDOIMPORT V/O Port belonging to MURMANSK, U.S.S.R.

Installation fitted by SIEMENS SÄHKÖ OY When fitted 1961

Is vessel equipped for carrying Petroleum in bulk No Is vessel equipped with D.F. Yes E.S.D. Yes Gy.C. Yes Sub.Sig. Radar Yes

Plans, have they been submitted and approved Yes System of Distribution 3-Phase 3-Wire System Voltage of Lighting 127 V

Heating 220 V Power 380 V D.C. or A.C. Lighting AC Power AC If A.C. state frequency 50 c.p.s.

Prime Movers, has the governing been found as per Rule when full load is thrown on and off Yes Are turbine emergency governors fitted

Generators, are they compound wound with exception and level compounded under working conditions

Are the generators arranged to run in parallel of 62,5 kVA Is the compound winding connected to the negative or positive pole

Have machines 100 kw. and over been inspected by the Surveyors during manufacture and testing Yes Have certificates of test for machines

under 100 kw. been supplied and the results found as per Rule Yes Position of Generators 3 on the platform of the foreengine room, 4 on the platform of the aft. engine room, 1 emergency generator on the boat deck

Is the ventilation in way of generators satisfactory Yes are they clear of inflammable material and protected from mechanical injury and damage from water, steam and oil Yes Switchboards, where are main switchboards placed in a separate switch-board room

are they in accessible positions, free from inflammable gases and acid fumes and protected from mechanical injury and damage from water, steam and oil Yes what insulation is used for the panels melamin, dead-front switchboard, if of synthetic insulating material is it an Approved Type Yes if of semi-insulating material (slate or marble) are all conducting parts insulated therefrom as per Rule Is the construction as per Rule, including locking of screws and nuts Yes Description of Main Switchgear for each generator and arrangement of equaliser switches Three phase air-circuit-breakers with overload, short-circuit, no voltage and rev. power protection, pneumatically operated, with emergency hand operation and the switch and fuse gear (or circuit breakers) for each outgoing circuit Three fuses with linked three phase switches or circuit-breakers

Are compartments containing switchboards composed of fire-resisting material or lined as per Rule Yes Instruments on main switchboard 27

ammeters 12 voltmeters 2 synchronising devices. For compound machines in parallel are the ammeters and reverse current protection devices connected on the pole opposite to the equaliser connection Earth Testing, state means provided Ohm-

meters with selector switch Preference Tripping, state if provided Yes, 3 stages, and tested Yes

Switches, Circuit Breakers and Fuses, are they as per Rule yes, are the fuses an Approved Type yes

make of fuses Siemens-Schuckert- are all fuses labelled yes If circuit breakers are provided for the generators, at what overload do they operate 1.15 x rated current after 10 sec. and at what current do the reverse current protective devices operate 10 % after 2 sec. Cables, are they insulated and protected as per Rule Yes

if otherwise than as per Rule are they of an Approved Type less than 6% state maximum fall of pressure between bus bars and any point under maximum load normal volts. Are all paper insulated and varnished cambric insulated cables sealed at the ends Yes

Are all the cable runs in accessible positions not exposed to drip or accumulation of water or oil, high temperatures or risk of mechanical damage yes, are any cables laid under machines or floorplates Yes, if so, are they adequately protected Yes State type of cables (if in conduit this should also be stated) in machinery spaces LKNCJ; LJCP; MGGQ; LJPE, galleys LJPE, LJCP and laundries LJPE, LJCP State how the cables are supported or protected According to the rules, on cablerunners in Machinery spaces - In Accomodations LC cable clipped to woodwork, or PVC cables in conduit (See secretary's letter of 25.8.59.)

Are all lead sheaths, armouring and conduits effectually bonded and earthed Yes Are all cables passing through decks and watertight bulkheads provided with deck tubes or watertight glands Yes, where unarmoured cables pass through beams, etc., are the holes effectively bushed Yes Refrigerated chambers, are the cables and fittings as per Rule Yes

Have refrigeration fan motors been constructed under survey no and test certificates supplied

Are the motors accessible for maintenance at all times Yes

The generators are selfexcited A.C. with no-rotational excitation equipment



3 core

DESCRIPTION.	Mo n:o kW	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (lead plus return feet).	INSULA- TION.	PROTECTIVE COVERING.
		No. in Parallel per Pole.	Sectional Area or No. and Dia. of Strands. Sq. ins. or sq. mm.	In the Circuit.				
				In the Circuit.	Rule.			
Aux. engine room fan	✓ 275 2,1	1	1,5 sq.mm	4	7 ✓	35	vulc. rubber	Steel wire braid
Ballast and bilge pump	✓ 49 11	1	10 "	20,5	27 ✓	19	"	"
"	✓ 4 11	1	10 "	20,5	27 ✓	40	"	"
Heeling pump	✓ 144 74	1	70 "	145	148 ✓	89	VC	"
"	✓ 143 43	1	35 "	89	93 ✓	36	"	"
"	✓ 111 43	1	35 "	89	93 ✓	63	"	"
"	✓ 110 68	1	70 "	130	148 ✓	63	"	"
Deck crane 1,5 t.	✓ 245 25	1	16 "	48	58 ✓	26	"	"
"	✓ 244 25	1	16 "	48	58 ✓	27	"	"
Movable emergency pump	✓ 324 50	1	50 "	95	118 ✓	21	"	"

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DESCRIPTION.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (lead plus return feet).	INSULA- TION.	PROTECTIVE COVERING.
	No. in Parallel per Pole.	Sectional Area or No. and Dia. of Strands. Sq. ins. or sq. mm.	In the Circuit.				
			In the Circuit.	Rule.			
AB 13 - HB 10	1	4 sq.mm	15	16 ✓	30	vulc. rubber	Steel wire braid 3 core
AB 13 - HB 1	2	70 "	250	2x148 ✓	70	VC	"
AB 21 - PB 5	1	35 "	93	93 ✓	56	"	"
AB 22 - PB 3	1	16 "	56	58 ✓	43	"	"
AB 23 - PB 11	1	10 "	30	44 ✓	46	"	"
AB 23 - PB 12	1	10 "	23	44 ✓	56	"	"
AB 23 - PB 13	1	4 "	9	16 ✓	49	vulc. rubber	"
AB 23 - PB 19	1	16 "	30	58 ✓	126	VC	"
AB 23 - PB 38	1	25 "	32	75 ✓	30	"	"
AB 23 - PB 9	1	16 "	59	58 ✓	70	"	"
AB 24 - PB 18	1	16 "	29	58 ✓	38	"	"
AB 24 - PB 15	1	16 "	34	58 ✓	39	"	"
AB 24 - PB 24	1	6 "	20	21 ✓	17	vulc. rubber	"
AB 24 - PB 23	1	6 "	20	21 ✓	38	"	"
AB 24 - PB 22	1	16 "	60	58 ✓	33	VC	"
AB 24 - PB 30	1	16 "	44	58 ✓	60	"	"
AB 24 - PB 7	2	50 "	180	2x118 ✓	35	"	"
AB 24 - PB 8	2	50 "	210	2x118 ✓	89	"	"
AB 25 - PB 21	1	6 "	9	21 ✓	67	vulc. rubber	"
AB 25 - PB 31	1	16 "	53	58 ✓	16	VC	"
AB 25 - PB 1	2	70 "	190	2x148 ✓	14	"	"
AB 25 - PB 10	2	150 "	465	2x242 ✓	16	"	"
AB 25 - PB 36/PB 37	1	10 "	30	44 ✓	12	"	"
AB 25 - PB 32	1	25 "	61	75 ✓	26	"	"
AB 26 - PB 40	1	35 "	65	93 ✓	92	"	"
AB 31 - PB 34	1	2,5 "	3	13 ✓	48	vulc. rubber	"
AB 31 - PB 4	1	10 "	24	27 ✓	39	"	"
AB 31 - PB 6	1	35 "	92	93 ✓	24	VC	"
AB 31 - PB 2	2	70 "	260	2x148 ✓	39	"	"
AB 32 - PB 16	1	6 "	11	21 ✓	23	vulc. rubber	"
AB 32 - SB 1	1	35 "	85	93 ✓	75	VC	"
EB - EL 8	1	10 "	35	44 ✓	53	"	"
EB - EL 4/EL 3	1	10 "	20	27 ✓	33	vulc. rubber	"
EB - EL 5/EL 6	1	10 "	16	27 ✓	21	"	"
EB - EL 2	1	10 "	14	27 ✓	36	"	"
EB - EL 1/EL 9	1	10 "	22	27 ✓	49	"	"
EB - EL 7	1	10 "	12	44 ✓	53	VC	"
BC - BL 1	1	10 "	50	63 ✓	64	"	"
BC - BL 2	1	10 "	25	38 ✓	35	vulc. rubber	"
BC - BE 3	1	4 "	16	23 ✓	19	"	"
BC - BL 4	1	6 "	19	29 ✓	4	"	"
HB 8 - HB 11	1	4 "	9	16 ✓	15	"	"
HB 1 - HB 2	1	16 "	55	58 ✓	15	VC	"
HB 1 - HB 3	1	10 "	10	27 ✓	28	vulc. rubber	"
HB 1 - HB 4/HB 5	1	10 "	31	44 ✓	23	VC	"
PB 5 - PB 17	1	6 "	19	21 ✓	7	vulc. rubber	"
PB 16 - PB 41	1	2,5 "	6	13 ✓	21	"	"
PB 17 - PB 42	1	2,5 "	6	13 ✓	23	"	"
PB 3 - PB 35	1	10 "	32	44 ✓	12	VC	"
PB 7 - PB 39	1	2,5 "	1	13 ✓	17	vulc. rubber	"
PB 31 - PB 14	1	10 "	18	27 ✓	34	"	"
PB 31 - PB 20	1	6 "	16	21 ✓	51	"	"
PB 31 - PB 26	1	10 "	20	27 ✓	65	"	"
PB 1 - PB 25	1	50 "	66	118 ✓	6	VC	"
PB 1 - PB 27	1	70 "	73	148 ✓	53	"	"
PB 1 - PB 28	1	50 "	34	118 ✓	60	"	"
PB 1 - PB 29	1	50 "	10	118 ✓	38	"	"
PB 32 - PB 33	1	16 "	44	58 ✓	34	"	"

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3 core

3 core

MAIN DISTRIBUTION CABLES (to Auxiliary Switchboard etc.)

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DESCRIPTION.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (lead plus return feet).	INSULATION.	PROTECTIVE COVERING.
	No. in Parallel per Pole.	Sectional Area or No. and Dia. of Strands. Sq. ins. or sq. mm.	In the Circuit.	Rule.			
AB 31 - Radio-Switchboard	✓ 1	10 sq. mm	30	44 ✓	78	VC	Steel wire braid <i>3 core</i>
AB 31 - PP 12	✓ 3	95 "	350	3x180 ✓	10	VC	" "
AB 32 - Steering gear	✓ 1	120 "	140	210 ✓	53	VC	" "
AB 36 - FL 1 (<i>shore</i>)	✓ 2	70 "	300	2x148 ✓	48	VC	" "
AB 36 - AB 23	✓ 7	150 "	500	7x242 ✓	12	VC	" "
AB 36 - Tr 5	✓ 3	70 "	395	3x148 ✓	26	VC	" "
AB 310 - PP 12	✓ 3	95 "	350	3x180 ✓	18	VC	" "
FL 3 - Towing winch board	2	120 "	570	2x292	12	VC	" <i>Single core</i>
AB - Radio Switchboard	1	10 "	30	38 44	41	Rubber	" "

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The Electrical Equipment is installed in accordance with the approved plans and the requirements of the Rules.
All Insulated Conductors are guaranteed to have been tested at the maker's works as specified in the Rules.

The foregoing is a correct description.

[Signature]
SIEMENS SAHKKO OY
[Signature]

Electrical Contractors.

Date 22th Dec. 1961

COMPASSES

Have the compasses been adjusted under working conditions... yes

Wärtsilä-koncernen A/B
SANDVÄGENS SKEPPSÖSKA

[Signature]

Builder's Signature.

Date 29. 12. 61.

Have the foregoing descriptions and schedules been verified and found correct... yes

Is this installation a duplicate of a previous case... yes If so, state name of vessel "MOSKVA"

Plans. Are approved plans forwarded herewith... If not, state date of approval Main switchboard 6.3.59

Certificates. Are certificates of test for motors engaged on essential sea services and generators forwarded herewith... yes

General Remarks. (State quality of workmanship and materials, opinions as to class, etc.) The electric equipment of this ship has been fitted on board under special survey, tried under full working conditions and found fit for class. Material and workmanship found good.

5m.3.58-Transfer. (MADE AND PRINTED IN ENGLAND)
(The Surveyors are requested not to write on or below the space for Committee Minute.)

Total Capacity of Generators 2.585,5 ~~Kilowatts~~ kVA
From Auxiliary Supply for excitation of Propulsion Equipment= 244 kVA.

The amount of Fee ... £	When applied for,
INSTALLATION F.M.K. 247,480	19
SERVICES OF BUREAU, FINL. SURVEYOR FROM GOTH. F.M.K. 125,000	
TRAV. EXP. GOOTH. SURV. S.W. KR 1,910.	
Travelling Expenses (if any) £	When received,
	19

[Signature]
Surveyor to Lloyd's Register of Shipping

FRIDAY 16 FEB 1962

Committee's Minute

Assigned *[Signature]*



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