

Rpt. 13.

No. 20168

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office

Date of writing Report 29-4-1963 When handed in at Local Office 19 Port of Copenhagen
 No. in Survey held at Copenhagen Date, First Survey 9/1 Last Survey 5/4 19 63
 Reg. Book. (No. of Visits 14)
 92679 on the m.s. "KOSMONAVT" Tons { Gross 10658 Net
 Built at Copenhagen By whom built A/S Burmeister & Wain Yard No. 791 When built 1963
 Owners U.S.S.R. Port belonging to Odessa
 Installation fitted by A/S Burmeister & Wain When fitted 1963
 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 three-phase three-wire Voltage of Lighting 127
 Heating 380 Power 380 D.C. or A.C., Lighting A.C. Power A.C. If A.C. state frequency 50 c/sec.
 Prime Movers, has the governing been found as per Rule when full load is thrown on and off yes Are turbine emergency governors fitted with a trip switch - Generators, are they compound wound - and level compounded under working conditions -
 Are the generators arranged to run in parallel yes 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 2-355 KVA & 2-215 KVA Gens.:
 Eng. room floor level stbd. side. 1-355 KVA Gen.: - Eng. room floor level aft.
 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 On a flat at the stbd. side, of engine 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 Sheet steel cubicle type, if of synthetic insulating material is it an Approved Type - 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. A triple-pole linked circuit-breaker with overcurrent trips in each phase and reverse-power relay.

and the switch and fuse gear (or circuit breakers) for each outgoing circuit. Switchboard for ventilating fans holds 1-2-3 & 4:-
 A triple-pole linked circuit-breaker with overcurrent trips. Shore connection:- A triple-pole linked circuit-breaker. Remainder triple-pole linked switches with a fuse in each phase.
 Are compartments containing switchboards composed of fire-resisting material ~~as per Rule~~ yes Instruments on main switchboard 8
 ammeters 5 voltmeters 1 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 Ohmmeter through neutral point resistance Preference Tripping, state if provided yes, and tested yes
 Switches, Circuit Breakers and Fuses, are they as per Rule yes, are the fuses an Approved Type yes
 make of fuses Laur. Knudsen & Siemens, are all fuses labelled yes If circuit breakers are provided for the generators, at what overload do they operate 50% and at what ~~current~~ power do the reverse ~~current~~ protective devices operate 10% Cables, are they insulated and protected as per Rule yes
 if otherwise than as per Rule are they of an Approved Type - state maximum fall of pressure between bus bars and any point under maximum load 17.8 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 Vulc.R. & Varn.C., galleys Vulc.R. and laundries Vulc.R. State how the cables are supported or protected. The cables are supported by galvanised clips. Cables in machinery spaces are placed on perforated galvanised steel plates and supported by galvanised clips. Where necessary the cables are protected by galvanised steel plates.

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 effectually bushed yes Refrigerated chambers, are the cables and fittings as per Rule -
 Have refrigeration fan motors been constructed under survey - and test certificates supplied -
 Are the motors accessible for maintenance at all times -

Alternative Lighting, are the groups of lights in the engine and boiler rooms arranged as per Rule — Emergency Supply, state position 24 Volts alkaline batteries in separate room on bridge deck

Navigation Lamps, are they separately wired yes controlled by separate double pole switches and fuses yes Are the switches and fuses in a position accessible only to the officers on watch yes is an automatic indicator fitted yes Is an alternative supply provided yes

Secondary Batteries, are they constructed, fitted and adequately ventilated as per Rule yes state battery capacity in ampere hours 200 Where required to do so does it comply with 1948 International Convention —

Lighting, is fluorescent lighting fitted yes If so, state nominal lamp voltage 220 and compartments where lamps are fitted inside main switchboard

Fittings, are all fittings on weather decks, in stokeholds and engine rooms and wherever exposed to drip or condensed moisture, weatherproof yes

Searchlights, No. of 3, whether fixed or portable portable, are they of the carbon arc or of the filament type filament

Heating and Cooking, is the general construction as per Rule yes, are the frames effectually earthed yes, are heaters in the accommodation of the convection type yes Motors, are all motors constructed and installed as per Rule and placed in well-ventilated compartments in which inflammable gases cannot accumulate and protected from damage from water, steam and oil yes

Are motors coupled to oil fuel transfer and pressure pumps capable of being stopped from a position accessible in the event of fire in the pump compartment yes Have motors of 100 BHP and over been inspected by the Surveyors during manufacture and testing yes

Have certificates of test for motors under 100 BHP intended for essential sea services been supplied and the results found as per Rule yes

Lightning Conductors, where required are they fitted as per Rule —

Ships carrying Oil having a Flash Point of less than 150° F. Have all the special requirements of the Rules for such ships been complied with —, are all fuses of an Approved Cartridge Type —, make of fuse — Are the fittings for pump rooms, tween deck spaces, etc., in accordance with the special requirements for such ships — Are all cables lead covered as per Rule —

E.S.D., if fitted state maker U.S.S.R. location of transmitter and receiver Frames 60-61

Spare Gear, if the vessel is for open sea service have spares been provided as per Rule and suitably stored in dry situations yes

Insulation Tests, has the insulation resistance of all circuits and apparatus been tested and found satisfactory yes

PARTICULARS OF GENERATING PLANT.

DESCRIPTION OF GENERATOR.	No. of	MAKER.	KVA	RATED AT			PRIME MOVER.	
				Volts.	Ampères.	Revs. per Min.	TYPE.	MAKE.
MAIN	2	Thomas B. Thrige	215	400	310	500	Heavy oil	A/S Burmeister & Wain
	2	Thomas B. Thrige	355	400	512	500	" "	A/S Burmeister & Wain
	1	Thomas B. Thrige	355	400	515	600	Main engine driven	
Lighting EMERGENCY ROTARY TRANSFORMER	2	Thomas B. Thrige	90	380/128	137/406			

GENERATOR CABLES.

DESCRIPTION.	No. of	KVA	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (Meters/Feet)	INSULATION.	PROTECTIVE COVERING.
			No. in Parallel per Pole.	Sectional Area or No. and Dia. of Strands.	In the Circuit.	Rule.			
MAIN GENERATOR	2	215	2	3 x 95	310	350	9/14	Varn.C.	Lead sheathed
" " EQUALISER	2	355	3	3 x 95	512	525	3/7	"	& steel wire
Shaft	1	355	3	3 x 95	515	525	10	"	armoured
Lighting Transformer	2	90	—	3 x 95	137	175	5	"	"
EMERGENCY GENERATOR									
ROTARY TRANSFORMER MOTOR									
" " GENERATOR.									

MAIN DISTRIBUTION CABLES (to Auxiliary Switchboards, etc.).

DESCRIPTION.	No. of	Sectional Area or No. and Dia. of Strands.	MAXIMUM CURRENT IN AMPERES.	APPROX. LENGTH (Meters/Feet)	INSULATION.	PROTECTIVE COVERING.
Starter switchboard forward	—	200	1.5		Bare copper	
Starter switchboard aft	—	200	1.5		"	
Ventilation holds 4 & 5	—	3 x 70	126	145	35	Varn.C. Lead sheathed & arm'd
Cargo Caire - frame 10	—	3x1x14.5	85	93	70	Mineral Copper
Switchboard for essential lights, etc.	—	3 x 95	140	175	5	Varn.C. Lead sheathed & arm'd
" " " " "	3	3 x 95	410	525	5	" "
Non-essential switchboard	2	3 x 50	160	230	8	" "
Cranes Nos. 4-5 & 6	—	3 x 95	148	175	25	" "
Cargo Caire - frame 95	—	3x1x14.5	85	93	50	Mineral Copper
Cargo Caire - frame 145	—	3x1x14.5	85	93	100	" "
Winches holds 3 & 4	—	3x1x64.5	160	240	45	" "
Cranes Nos. 1-2 & 3	—	3x1x64.5	180	240	70	" "
Mooring winches forward	—	3x1x64.5	147	240	35	" "
Mooring winches aft	—	3x1x38.7	117	175	60	" "
Shore connection	—	3 x 95	175	175	20	Varn.C. Lead sheathed & arm'd

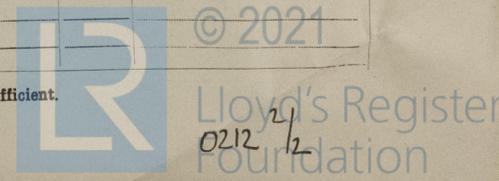
DISTRIBUTION CABLES (to Section-Boards and Distribution-Fuse-Boards, etc.).

DESCRIPTION.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (Meters/Feet)	INSULATION.	PROTECTIVE COVERING.
	No. in Parallel per Pole.	Sectional Area or No. and Dia. of Strands.	In the Circuit.	Rule.			
Ventilation holds 1-2-3 & 4	—	3x1x38.7	85	175	60	Mineral	Copper
Laundry Galley	—	3x2.5	9.6	11	30	Vulc.R.	Lead sheathed & arm'd
	—	3x50	92	115	30	Varn.C.	"
Navigation instruments	—	3x10	30	44	35	"	"
Navigation lights	—	2x2.5	3	14	35	Vulc.R.	"
Engine telegraph	—	2x2.5	3	14	40	"	"
Light boat deck	—	3x10	20	28	35	"	"
Light officers	—	3x16	40	58	35	Varn.C.	"
Light promenade deck	—	3x10	30	44	25	"	"
Light upper deck	—	3x16	35	58	25	"	"
Light holds	—	3x16	35	58	25	"	"
Light weather decks	—	3x25	50	77	20	"	"
Light winchhouse forward	—	3x1x38.7	16	175	60	Mineral	Copper
Test switchboard	—	3x4	10	16	10	Vulc.R.	Lead sheathed & arm'd
Light aft	—	3x1x14.5	30	93	60	Mineral	Copper
Boat winch	—	3x6	18	21	35	Vulc.R.	Lead sheathed & arm'd
Gangway winch	—	3x6	18	21	35	"	"
Radar	—	3x2.5	8.5	11	35	"	"
Final Sub-Circuits from Main Switchboard							
Gyro	—	3x2.5	9	11	15	"	"
Auto-pilot	—	3x2.5	5	11	35	"	"
" " "	—	3x2	5	18	60	Mineral	Copper
Wireless	—	3x6	15	21	25	Vulc.R.	Lead sheathed & arm'd
Suez-searchlight	—	2x3	8	29	100	Mineral	Copper

MOTOR CABLES.

ALL IMPORTANT MOTORS TO BE ENUMERATED.	No.	B.H.P.	CONDUCTORS.	MAXIMUM CURRENT IN AMPERES.	APPROX. LENGTH (Meters/Feet)	INSULATION.	PROTECTIVE COVERING.
Lub. oil pump	2	100	3x70	136	145	23/35	Varn.C. Lead sheathed & arm'd
Main cooling water pump	3	45	3x25	62	77	22/36	" "
Vent. fan for eng. room	2	18/3.5	3x10	27	44	50/60	" "
" " " " "	—	—	3x1.5	8	8	30	Vulc.R.
Fuel oil transfer pump	2	25	3x10	35.8	44	15/20	Varn.C.
Ballast pump	2	24	3x10	35	44	15/28	" "
Fire pump	2	40	3x16	60	58	15/25	" "
Air compressor	2	85	3x70	114	145	30/37	" "
Fuel valve cooling pump	2	2.5	3x1.5	4.3	8	35	Vulc.R.
Fuel oil circ. pump	2	2.5	3x1.5	4.3	8	20/30	" "
Lub. oil pump f. turbo-charger	2	1.5	3x1.5	2.9	8	10/20	" "
Fuel oil purifier	4	12.5	3x10	19	28	25/30	" "
Lub. oil purifier	1	12.5	3x10	19	28	30	" "
Lub. oil supply pump	1	1.5	3x1.5	3	8	15	" "
Cylinder oil pump	1	1	3x1.5	1.85	8	15	" "
Oil burner	1	2.5	3x1.5	4.2	8	20	" "
Turning gear	1	22	3x10	34	44	25	Varn.C.
Boiler circ. pump	1	5.5	3x2.5	7.7	11	20	Vulc.R.
Bilge pump	1	10	3x6	15.4	21	30	" "
Air compressor	1	3.5	3x1.5	5.6	8	10	" "
Emergency blower	1	75	3x50	105	115	20	Varn.C.
Aux. cooling water pump	2	6	3x2.5	8.8	11	10/37	Vulc.R.
Windlass	1	90/75	3x1x38.7	125	175	100	Mineral Copper
" " " " "	—	—	3x70	125	145	7	Varn.C. Lead sheathed & arm'd
Steering gear	2	30	3x14.5	45	65	70	Mineral Copper

NOTE.—Use Rpt. 13 Continuation Sheet if the above space is insufficient.



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.

AKTIESELSKABET
for BURMEISTER & WAIN'S MASKIN- OG SKIBSBYGGERI Electrical Contractors. Date 30-4-63
M. M. M.

COMPASSES.

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

AKTIESELSKABET
for BURMEISTER & WAIN'S MASKIN- OG SKIBSBYGGERI Builder's Signature. Date 30-4-63
M. M. M.

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 M.S. "BELOVODSK"

Plans. Are approved plans forwarded herewith... no If not, state date of approval 13/3-17/4 & 23/6-1961

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 electrical installation of this ship has been fitted under special survey in accordance with the Rules, approved plans and Secretary's letters.

The material used is in accordance with the Rules and the workmanship is good.

On completion the electrical installation was tested under working conditions and found in efficient condition.

Total Capacity of Generators 1495 KVA

The amount of Fee ... Kr. 3535. When applied for, 31/5 10 63

Travelling Expenses (if any) £ : : 19

K. Larsen
Surveyor to Lloyd's Register of Shipping.

Committee's Minute FRIDAY 28 JUN 1963

Assigned *See Rpt 1*

2m.455.—Transfer. (MADE AND PRINTED IN ENGLAND)
(The Surveyors are requested not to write on or below the space for Committee Minutes.)

E6 JUN 1963



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