

Rpt. 13.

No. 21210

# REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office

23 NOV 1964

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

No. in Survey held at Nakskov Date, First Survey 9.6.64 Last Survey 2.10.19 64

Reg. Book. 41965 on the m.s. "BIJSK" (No. of Visits 19) Tons { Gross 10684 Net 5950

Built at Nakskov By whom built A/S Nakskov Skibsværft Yard No. 172 When built 1964

Owners U.S.S.R. Port belonging to Odessa

Installation fitted by A/S Nakskov Skibsværft When fitted 1964

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 In a separate room at the stbd. side of main engine room floor level.

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 main 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 over-current trips and reverse power relay.

and the switch and fuse gear (or circuit breakers) for each outgoing circuit Preference tripping and shore connection:- Triple pole linked circuit breakers and switches with a fuse in each phase. Remainder:- Triple pole linked switches with a fuse in each phase.

Are compartments containing switchboards composed of fire-resisting material or lined 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 ohm meter 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% power, and at what current do the reverse current protective devices operate 10% power

Cables, are they insulated and protected as per Rule Yes

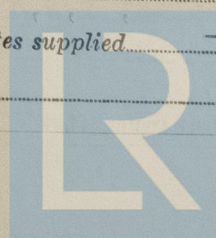
if otherwise than as per Rule are they of an Approved Type - state maximum fall of pressure between bus bars and any point under maximum load 11 volts. Are all paper insulated and varnished cambric insulated cables sealed at the ends Yes

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 Varn.C. and laundries Vulc.R. State how the cables are supported or protected The cables are supported by galvanised clips and saddles fixed on galvanised perforated trays. 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 effectively 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 -



© 2021

Lloyd's Register  
Foundation



Alternative Lighting, are the groups of lights in the engine and boiler rooms arranged as per Rule — Emergency Supply, state position In a separate room on the bridge deck portside.

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. 580 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. — at manoeuvring place engine room.

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 59 - 60

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.	
			KVA per Generator.	Volts.	Amps.	Rev. per Min.	TYPE.	MAKER.		
MAIN	2	Thomas B. Thrige	500	400	720	500	Heavy oil	A/S Burmeister & Wain		
	1	Thomas B. Thrige	215	400	310	500	"	A/S Burmeister & Wain		
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 (Less than 1000 metres)	INSULATION.	PROTECTIVE COVERING.
			No. in Parallel per Pole.	Sectional Area or No. and Dia. of Strands. Sq./Dia. or sq. mm.	In the Circuit.	Rule.			
MAIN GENERATOR	2	500	5	3 x 95	720	875	5/8	Varn.C	Lead sheathed
	1	210	2	3 x 95	310	350	10	"	& armoured
" " EQUALISER									
Lighting transformer	2	90	—	3 x 95	137	175	5	"	"
EMERGENCY GENERATOR									
ROTARY TRANSFORMER: MOTOR									
" " GENERATOR									

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

DESCRIPTION.									
Starter switchboard forward	—	400			1.5	Bare	copper		
Starter switchboard aft	—	400			1.5	"	"		
Switchboard f. essential lights etc.	—	3x95	137	175	5	Varn.C	Lead sheathed & arm'd.		
" " " " " "	3	3x95	406	525	5	"	"		
Pumps for winches hold 4 etc.,	—	3x1x64	210	240	45	Mineral	copper		
Pumps for winches hold 3 etc.,	—	3x1x64	210	240	45	"	"		
Pumps for cranes Nos. 1, 2 & 3	—	3x1x64	210	240	90	"	"		
Pumps f. hatch covers hold 1 & windlass	—	3x1x64	190	240	100	"	"		
Pumps f. cranes Nos. 4, 5 & 6 etc.,	2	3 x 50	210	230	25	Varn.C	Lead sheathed & arm'd.		
Ventilation holds 4 & 5	—	3 x 95	163	175	25	"	"		
Non essential switchboard	2	3 x 50	160	175	8	"	"		
Ventilation holds, 1, 2, 3 & 4	—	3x1x25	108	130	65	Mineral	copper		
Laundry	—	3x2.5	9.6	11	30	Vulc.R	Lead sheathed & arm'd.		
Galley	—	3 x 70	120	145	30	Varn.C	"		
Navigation instruments	—	3 x 16	40	58	35	"	"		

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

DESCRIPTION.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (Less than 1000 metres)	INSULATION.	PROTECTIVE COVERING.
	No. in Parallel per Pole.	Sectional Area or No. and Dia. of Strands. Sq./Dia. or sq. mm.	In the Circuit.	Rule.			
Navigation lights	—	2 x 2.5	3	14	35	Vulc.R.	Lead sheathed
Engine telegraph	—	2 x 2.5	3	14	40	"	and armoured.
Lighting boat deck	—	3 x 16	35	58	35	Varn.C.	"
Lighting officers' deck	—	3 x 16	40	58	35	"	"
Lighting promenade deck	—	3 x 16	35	58	25	"	"
Lighting upper deck	—	3 x 25	55	77	25	"	"
Lighting holds	—	3 x 16	35	58	25	"	"
Lighting weather decks	—	3 x 25	50	77	20	"	"
Lighting forward	—	3 x 14	16	65	60	Mineral	copper
Lighting aft	—	3 x 14	16	65	60	"	"
Test switchboard	—	3 x 4	15	16	10	Vulc.R	Lead sheathed
Lighting engine room	—	45				Bare	Copper
Searchlight bridge stbd.	—	3 x 10	16	28	40	Vulc.R	and armoured
Searchlight bridge port	—	3 x 10	16	28	40	"	"
Final Lub. Circuits from Main Switchboard							
Suez searchlight	—	2 x 3	8	29	100	Mineral	Copper
Pump for Capstan	—	3x1x25	90	130	60	"	"
Pump for steering gear	—	3x 14	47	65	70	"	"
Auto-pilot	—	3 x 2.5	8	11	35	Vulc.R.	Lead sheathed & arm'd.
Wireless	—	3 x 10	15	28	25	"	"
Radar	—	3 x 2.5	8	11	35	"	"
Gyro	—	3 x 2.5	9	11	30	"	"

#### MOTOR CABLES.

ALL IMPORTANT MOTORS TO BE ENUMERATED.		No.	B.H.P.								
Vent. fan for eng. room	2	25/5	—	3 x 10	35	44	35	Varn.C	Lead sheathed & arm'd.		
" " " "	—	—	—	3 x 2.5	10	11	35	Vulc.R	"		
Lub. oil pump	2	100	—	3 x 70	144	145	35	Varn.C	"		
Main cooling water pump	3	45	—	3 x 25	63	77	35/37	"	"		
Fuel oil transfer pump	1	25	—	3 x 10	35.8	44	15	Varn.C	"		
Fuel oil transfer pump	1	12.5	—	3 x 10	35	44	35	"	"		
Fuel oil transfer pump	—	—	—	3 x 2.5	21.5	11	35	Vulc.R	"		
Ballast pump	2	60	—	3 x 35	88	94	15/28	Varn.C	"		
Fire pump	2	50	—	3 x 25	74	77	15/25	"	"		
Air compressor	2	95	—	3 x 70	136	145	30/37	"	"		
Air compressor	1	8	—	3 x 4	12.5	16	10	Vulc.R	"		
Emergency blower	1	75	—	3 x 50	105	115	20	Varn.C	"		
Fuel valve cooling pump	2	1.5	—	3 x 1.5	2.9	8	35	Vulc.R	"		
Fuel oil circ. pump	2	1.5	—	3 x 1.5	2.9	8	20/30	"	"		
Lub. oil pump f. turbochgs.	2	1.5	—	3 x 1.5	2.9	8	10/20	"	"		
Boiler water circ. pump	1	5	—	3 x 2.5	7.4	11	25	"	"		
Fuel oil purifier	1	12.5	—	3 x 6	19	21	25	"	"		
Fuel oil purifier	1	12.5	—	3 x 10	19	28	30	Vulc.R	"		
Fuel & lub. oil purifier	1	8	—	3 x 10	12.4	28	30	"	"		
Lub. oil purifier	1	8	—	3 x 4	12.4	16	30	"	"		
Aux. cooling water pump	2	8	—	3 x 2.5	11.8	11	10/32	"	"		
Lub. oil supply pump	1	1.5	—	3 x 1.5	3	8	15	"	"		
Cylinder oil pump	1	1	—	3 x 1.5	1.9	8	15	"	"		
Turning gear	1	17	—	3 x 10	26	44	25	Varn.C	"		
Oil burner	1	6	—	3 x 2.5	8.7	11	20	Vulc.R	"		
Lub. oil pump f. camshaft	2	1.5	—	3 x 1.5	2.9	8	20	"	"		
Bilge pump	1	10	—	3 x 6	15.4	21	10	"	"		
Pump f. windlass	2	56	—	3 x 35	86	94	5	Varn.C	"		
Pump f. steering gear	2	30	—	3 x 14	47	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  
NAKSKOV SKIBSVÆRFT

Electrical Contractors.

Date November 17<sup>th</sup>  
1964

#### COMPASSES.

Have the compasses been adjusted under working conditions. Yes

Builder's Signature.

Date

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

Is this installation a duplicate of a previous case. No If so, state name of vessel -

Plans. Are approved plans forwarded herewith. No If not, state date of approval 21st May, 1963

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. 1215 KVA Kilowatts.

The amount of Fee ... kr. 3635 When applied for, 9/11 19 64

Travelling Expenses (if any) £ : When received, 19 64

H. Hansen  
Surveyor to Lloyd's Register of Shipping.

Committee's Minute. FRIDAY 15 JAN 1965

Assigned. See Rpt. 1.