

28 JAN 1960

Rpt. 13

No. 12386

REPORT ON ELECTRICAL EQUIPMENT

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office

Date of writing Report 26-1-1960 When handed in at Local Office 19 Port of Stockholm

No. in Survey held at Gävle Date, First Survey 21.9.1959 Last Survey 28.11.1959
Reg. Book (No. of Visits 2)

40860 on the Twin Screw Motorship "ARBAN" Tons Gross 1500 Net -

Built at Gävle By whom built A/B Gävle Varv Yard No. 102 When built 1959

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

Installation fitted by A/B Elektroarmatur, Gävle When fitted 1959

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. No Radar Yes

Plans, have they been submitted and approved Yes System of Distribution 3-phase Voltage of Lighting 220
Heating 220 Power 380 D.C. or A.C. Lighting AC Power AC If A.C. state frequency 50

Prime Movers, has the governing been found as per Rule when full load is thrown on and off Yes Are automatic 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 Main engine room: One on port and one on starboard side aft: Aux. engine room: Port, centre and starboard.

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 Main engine room: On a platform port side aft. Aux. engine room: On a platform at forward end.

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 Dead front construction, 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 Triple pole linked circuit breaker with overcurrent release (in 2 phases), Reverse power release (in one phase) and No Volt release (between 2 phases).

and the switch and fuse gear (or circuit breakers) for each outgoing circuit Triple pole linked circuit breaker with overcurrent trip in each phase.

Are compartments containing switchboards composed of fire-resisting material or lined as per Rule Yes Instruments on main switchboard Aux. ER 13
ammeters M.E.R.3 M.E.R.2 + 1 frequency meter on each switchboard
A.E.R.9 voltmeters A.E.R.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 Earth
indicating lamps Preference Tripping, state if provided None fitted, and tested

Switches, Circuit Breakers and Fuses, are they as per Rule Yes, are the fuses an Approved Type Yes
make of fuses ASEA, are all fuses labelled Yes If circuit breakers are provided for the generators, at what
overload do they operate 110 % of the amperage and 10 seconds, and at what current do the reverse current protective
devices operate 15 % 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 Less than 6 lbs. Are all paper insulated and varnished cambric insulated cables sealed at the ends None fitted

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 VIRIC + A, galleys VIRIC + A

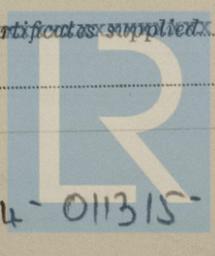
and laundries VIRIC + A State how the cables are supported or protected

Machinery spaces: VIRICA clipped to structure or cable trays.
Accommodations: VIRIC clipped to structure or run in conduit.

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 - domestic only.

Have refrigeration fan motors been constructed under survey and test certificates supplied

Are the motors accessible for maintenance at all times



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Alternative Lighting, are the groups of lights in the engine and boiler rooms arranged as per Rule Yes. Emergency Supply, state position Main eng. room: 2 lamps (1 group) connected before circuit breakers & 4 lamps (1 group) from battery. Aux. eng. room: 3 lamps (1 group) connected before circuit breakers & 2 lamps (1 group) from battery.

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 One 160 Ah for wireless. One 160 Ah for emerg. light. Where required to do so does it comply with 1948 International Convention.

Lighting, is fluorescent lighting fitted No. If so, state nominal lamp voltage and compartments where lamps are fitted.

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. Fixed, 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. None fitted.

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. None fitted.

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. Are the fittings for pump rooms, between 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. ATLAS location of transmitter and receiver. In No. 2 deep tank.

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	RATED AT				TYPE	PRIME MOVER
			Kw. per Generator	Volts	Ampères	Revs. per Min.		
MAIN	2	Hans Still AG (Ham)	100	400	144	1000	Diesel	M.A.N. AG (Aug.)
	3	"	200	400	289	600	"	"
EMERGENCY ROTARY TRANSFORMER								

GENERATOR CABLES

DESCRIPTION	No. of	Kw.	CONDUCTORS		MAXIMUM CURRENT IN AMPERES		APPROX. LENGTH (lead plus return feet)	INSULATION	PROTECTIVE COVERING
			No. in Parallel per Pole	Sectional Area of No. ONE END OF STRAND, sq. ins. or sq. mm.	In the Circuit	Rule			
MAIN GENERATORS	2	100	2	3 x 70	144	251	8 & 26	VIR	LC + A
" " EQUALISER	3	200	3	3 x 95	289	315	8, 10 & 12	VIR	LC + A
EMERGENCY GENERATOR									
ROTARY TRANSFORMER: MOTOR									
" " GENERATOR									

MAIN DISTRIBUTION CABLES (to Auxiliary Switchboards, etc.)

DESCRIPTION	No. of	CONDUCTORS	MAXIMUM CURRENT IN AMPERES	APPROX. LENGTH (lead plus return feet)	INSULATION	PROTECTIVE COVERING
From switchboard No. 1 in Aux. E.R. to switchboard No. 2 in Main E.R.	3	3 x 95	289	315	60	VIR LC + A

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

DESCRIPTION	CONDUCTORS		MAXIMUM CURRENT IN AMPERES		APPROX. LENGTH (lead plus return feet)	INSULATION	PROTECTIVE COVERING
	No. in Parallel per Pole	Sectional Area of No. ONE END OF STRAND, sq. ins. or sq. mm.	In the Circuit	Rule			
DFB K 1 for prov. refr. machinery	1	25	37	44	32	VIR	LC + A
DFB K 2 for purifiers, oil heaters etc.	1	95	105	105	50	"	"
DFB K 3 for KAMEWA-pumps etc.	1	70	90	87	56	"	"
DFB K 4 for ballast pump & air compressors	1	70	74.5	87	40	"	"
DFB K 5 for galley	1	50	63	69	30	"	"
DFB K 6 for workshop motors	1	4	5.3	16	40	"	"
DFB K 7 for laundry	1	10	18.3	27	40	"	"
DFB K 8 for Hi-pressure ventilation	1	25	35.5	44	56	"	"
DFB K 9 for oil fuel pumps	1	10	24.5	27	12	"	"
DFB B 1 for lighting in main E.R.	1	4	13.5	16	40	"	"
DFB B 2 & B2A for lighting on main deck	1	16	35.4	33	60	"	"
DFB B 3 for nav. lights on bridge deck	1	4	0.75	16	40	"	"
DFB B 4 & B4A for lighting on bridge deck	1	50	52	69	40	"	"
DFB B 5 for navig. instruments	1	25	42.5	44	60	"	"
DFB B 6 & B6A for heaters in accom. forward	1	25	42	44	40	"	"
DFB B 7 for heaters in accom. on main deck	1	50	41.5	69	20	"	"
DFB B 8 for searchlights and lighting	1	10	22	27	60	"	"
DFB B 9a & B9b for heating & lighting on lower deck	1	25	45	44	44	"	"

MOTOR CABLES

ALL IMPORTANT MOTORS TO BE ENUMERATED	No.	B.H.P.	CONDUCTORS	MAXIMUM CURRENT IN AMPERES	APPROX. LENGTH (lead plus return feet)	INSULATION	PROTECTIVE COVERING	
Starting air compressors	2	19	1	16	27.4	33	12 & 28 VIR LC + A	
Stand by lub. oil pumps	2	10.5	1	6	15.2	21	26 & 24	"
Main cooling water pumps	3	36	1	50	50.5	69	40, 44 & 40	"
Aux. cooling water pumps	1	14	1	10	22	27	24	"
Ballast pump	1	15	1	16	22	33	12	"
Bilge pump	1	9.5	1	6	13.8	21	16	"
Fire pump	1	15	1	16	22	33	20	"
O.F. transfer pump	1	16	1	16	23	35	26	"
O.F. transfer pump	1	4	1	4	5.8	16	16	"
Stand by pumps for KAMEWA	2	4.5	1	4	6.5	16	34 & 28	"
Oil purifiers	3	3.5	1	2.5	5.1	13	12, 16 & 20	"
DR feed water pump	1	3.2	1	2.5	5.3	13	70	"
Turning gears	2	4.5	1	4	6.5	16	10 & 16	"
Eng. room fans	2	8.5	1	6	12.5	21	10 & 14	"
Steering gear	1	15	1	10	22	27	54 & 100	"
Windlass forward	1	26	1	35	37.5	55	60	"
Windlass aft	1	16	1	16	23	33	100	"
Towing winch	1	45	1	35	60	55	70	"
Aux. cool. water pump	1	5.5	1	4	7.3	16	12	"

7/3/60

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.

AB Elektro-Armatur Electrical Contractors. Date 16/1 1960

H. Sundström Bengt Holmström

COMPASSES

Have the compasses been adjusted under working conditions. Yes

Aktiebolaget Gävle Värby

Bengt Holmström Builder's Signature.

Date 18.1.60

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. "PAMIR", "ALDAN" & "AGATAN"

Plans. Are approved plans forwarded herewith. No If not, state date of approval. 2.5.58.

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 vessel has been installed in accordance with the Rules and approved plans, and tested under working condition to my satisfaction.

The workmanship and materials used are good.

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

Total Capacity of Generators 800 KVA Kilowatts. (P.F.=0.8).

The amount of Fee ... £ 2,130:00 When applied for, 16-12 1959

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

J. Eriksson
 Surveyor to Lloyd's Register of Shipping

FRIDAY 11 MAR 1960

Committee's Minute

Assigned

See Apts. 1.

*7. RM9
 5-2-60*



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