

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

28 NOV 1936

Date of writing Report 24th Nov, 1936. When handed in at Local Office 26th Nov, 1936. Port of Malmö
 No. in Survey held at Landskrona Date, First Survey 17th Oct. Last Survey 21st Nov, 1936.
 Reg. Book Appl. 88856 on the Torri Toron M/s "JOHANNA THORDÉN" (Number of Vols. 12)
 Built at Landskrona By whom built Öresmidsvarvet Yard No. 41 Tons { Gross 3243
 Owners Rederiaktiebolaget Sjöka Nordamerika Port belonging to Örnsköldsvik Net 1642
 Electric Light Installation fitted by Öresmidsvarvet Contract No. ☒ When fitted 1936.
 Is the Vessel fitted for carrying Petroleum in bulk No.

System of Distribution

Pressure of supply for Lighting

230

volts, Heating

230

volts, Power

230

volts.

Direct or Alternating Current, Lighting

Direct

Power

Direct

If alternating current system, state frequency of periods per second

Has the Automatic Governor been tested and found efficient when the whole load is suddenly thrown on or off

Yes

Generators, do they comply with the requirements regarding temperature rise

Yes

are they compound wound

Yes

are they over compounded 5 per cent.

Yes

if not compound wound state distance between each generator

Where more than one generator is fitted are they arranged to run in parallel

Yes

is an adjustable regulating resistance fitted in series with each shunt field

approved

Yes

Have machines over 100 kw. been inspected by the Surveyors during manufacture and testing

Are all terminals accessible, clearly marked, and furnished with sockets

Yes

are they so spaced or shielded that they cannot be accidentally earthed, short circuited, or touched

Yes

Position of Generators

Are the lubricating arrangements of the generators as per Rule
 One on starboard and two on port side in the motor room.

in way of the generators satisfactory

Yes

are they clear of all inflammable material

Yes

if situated near unprotected

woodwork or other combustible material, state distance of same horizontally from or vertically above the generators

are the generators protected from mechanical injury and damage from water, steam or oil

Yes

are their axes of rotation fore and aft

Yes

Earthing, are the bedplates and frames of the generating plant efficiently earthed

Yes

are the prime movers and their respective generators

in metallic contact

Main Switch Boards, where placed

At fore end of motor room (centre)

If the generators and main switchboard are not placed in the same compartment, is each generator provided with

a fuse on each insulated pole as near as possible to the terminals of the generator, additional to that provided on the main switchboard

Switchboards, are they placed in accessible positions, free from inflammable gases and acid fumes

Yes

are they protected from mechanical

injury and damage from water, steam or oil

Yes

if situated near unprotected woodwork or other combustible material, state distance of same

horizontally from or vertically above the switchboards

Yes

are they constructed wholly of durable, non-ignitable non-absorbent

materials

Main steel

is all insulation of high dielectric strength and of permanently high insulation resistance

Yes

is it of an approved type

Yes

if semi-insulating material is used, are all conducting parts insulated from the slab with mica or micanite or other

non-hygroscopic insulating material, and the slab similarly insulated from its framework

No conducting parts pass through the slab.

is the non-hygroscopic insulating material of an approved

type

Yes

and is the frame effectively earthed

Yes

Are the fittings as per Rule regarding:— spacing or shielding of live parts

accessibility of all parts

Yes

absence of fuses on back of board

Yes

temperature rise of

omnibus bars

Yes

individual fuses to voltmeter, pilot or earth lamp

Yes

are moving parts of switches alive in the

"off" position

No

are all screws and nuts securing connections effectively locked

Yes

are any fuses fitted on the live side of

Switches

Generators: - A double pole circuit breaker with overload & reversed current trips and a single pole equalizer switch. Circuits: As per plan approved 23rd Oct, 1936.

Are turbine driven generators fitted with emergency trip switch as per rule

Are cupboards or compartments containing switchboards composed of

fire-resisting material or lined with approved material

Yes

Instruments on main switchboard

7

ammeters

3

voltage

Yes

synchronising device for paralleling purposes. For compound machines is the ammeter connected on the opposite pole to equaliser connection

Earth Testing, state what means are provided at the main switchboard for indicating the state of the insulation of the system

Ohm meter, lamps

Switches, Circuit Breakers and Fusible Cut-outs,

do these comply with the requirements of the Rules

Yes

are the fusible cutouts of an approved type

Yes

have the reversed

current protection devices been tested under working conditions. *Yes*

construction, protection, insulation, material, and position of these as per rule. *Yes*

Cables: Single, twin, concentric, or multicore. *Four single* are the cables insulated and protected as per Tables IV, V, X or XI of the Rules. *Yes*

If the cables are insulated otherwise than as per Rule, are they of an approved type. *Yes* Fall of Pressure, state maximum between bus bars and any point of the installation under maximum load. *4 volt (Windlass)*

Cable Sockets, are the ends of all cables having a sectional area of 0.04 square inch and above provided with soldering sockets. *Yes*

Paper Insulated and Varnished Cambric Insulated Cables, If conductors are paper or varnished cambric insulated, is the dielectric at the exposed ends of the conductor protected from moisture by being suitably sealed with insulating compound. *Yes* or waterproof insulating tape. *Yes*

Cable Runs, are the cables fixed as far as possible in accessible positions not exposed to drip or accumulation of water or oil, or to high temperature from boilers, steam pipes, uptakes or other hot objects, or to avoidable risk of mechanical damage. *Yes* Are cables in machinery spaces, galleys, laundries, bathrooms and lavatories lead covered or run in conduit. *Lead covered and armoured.*

Support and Protection of Cables, state how the cables are supported and protected. *Supported by metal clips and where necessary protected by steel sheet.*

If cables are run in wood casings, are the casings and caps secured by screws. *Yes* are the cap screws of brass. *Yes* are the cables run in separate grooves. *Yes* If armoured and lead covered cables are secured by metal clips, are the clips spaced as per Table VIII. *Yes*

Refrigerated Chambers, are the cables and fittings in accordance with the special requirements. *Yes*

Joints in Cables, state if any, and how made, insulated, and protected. *Watertight metal joint boxes.*

Watertight Glands and Deck Tubes, are all cables passing through decks and watertight bulkheads, provided with deck tubes or watertight glands. *Yes*

Bushes in Beams and Non-watertight Partitions, where unarmoured cables pass through beams and non-watertight partitions, are the holes efficiently bushed. *Yes* state the material of which the bushes are made. *Lead*

Earthing Connections, state what earthing connections are fitted and their respective sectional areas. *Yes*

are their connections made as per Rule. *Yes*

Alternative Lighting, are the groups of lights in the propelling machinery space arranged as per Rule. *Yes* Emergency Supply, state position and method of control of the emergency supply and how the generator is driven. *Yes*

Navigation Lamps, are these separately wired. *Yes* controlled by separate switch and separate fuses. *Yes* are the fuses double pole. *Yes* are the switches and fuses grouped in a position accessible only to the officers on watch. *Yes* has each navigation lamp an automatic indicator as per Rule. *Yes*

Secondary Batteries, are they constructed and fitted as per Rule. *Yes*

Fittings, are all fittings on weather decks, in stokeholds and engine rooms and wherever exposed to drip or condensed moisture, watertight. *Yes* are any fittings placed in spaces in which goods are liable to be stacked in close proximity to them; if so, how are they protected. *Yes*

are any fittings placed in spaces where inflammable or explosive dust or gases are liable to be present, if so, how are they protected. *Yes*

how are the cables led where are the controlling switches situated. *Yes*

are all fittings suitably ventilated. *Yes* are all switches and lampholders constructed wholly of non-ignitable, non-absorbent materials. *Yes*

Heating and Cooking Appliances, are they constructed and fitted as per Rule. *Yes* are air heaters constructed and fitted as per Rule. *Yes*

Searchlight Lamps, No. of. *Yes* whether fixed or portable. *Yes* are their fittings as per Rule. *Yes*

Are Lamps, other than searchlight lamps, No. of. *Yes* are their live parts insulated from the frame or case. *Yes* are their fittings as per Rule. *Yes*

Motors, are their working parts readily accessible. *Yes* are the coils self-contained and readily removable for replacement. *Yes* are the brushes, brush holders, terminals and lubricating arrangements as per Rule. *Yes* are the motors placed in well-ventilated compartments in which inflammable gases cannot accumulate and clear of all inflammable material. *Yes* are they protected from mechanical injury and damage from water, steam or oil. *Yes* are their axes of rotation fore and aft. *Yes, as a rule.* if situated near unprotected woodwork or other combustible material, are the motors of the totally enclosed, pipe ventilated, forced draught, drip or flame proof type. *Yes* if not of this type, state distance of the combustible material horizontally or vertically above the motors. *Yes* and *Yes*

have machines of over 100 BHP been inspected by the Surveyors during manufacture and testing. *Yes* Control Gear and Resistances, are the generator field and motor speed regulators, starters and controllers constructed and fitted as per Rule. *Yes*

Lightning Conductors, where lightning conductors are required, are these fitted as per Rule. *Yes*

Ships carrying Oil having a Flash Point less than 150° F. Have the special requirements of the Rules been complied with regarding switches, joint boxes, section and distribution boards, protection of cables, method of distribution, lead of cables, lights and fittings. *Yes* are all fuses of the filled cartridge type. *Yes* are they of an approved type. *Yes*

If portable lamps for use in dangerous spaces are supplied, are they of a self-contained, battery-fed type approved by the Home Office. *Yes*

Spare Gear, if the vessel is for open sea service have spares been supplied as per Rule. *Yes*

PARTICULARS OF GENERATING PLANT.									
DESCRIPTION OF GENERATOR.	No. of	RATED AT				DRIVEN BY	WHERE DRIVEN BY AN INTERNAL COMBUSTION ENGINE.		
		Kilowatts.	Volts.	Ampères.	Revs. per Min.		Fuel Used.	Flash point of Fuel.	
MAIN	3	3 x 70	230	305	350	Heavy oil engines	Heavy oil	Above 150° F.	
AUXILIARY	1	12	230	53	1000	"	"	"	
EMERGENCY									
ROTARY TRANSFORMER									

GENERATOR, LIGHTING AND HEATING CONDUCTORS.									
DESCRIPTION.	CONDUCTORS.		COMPOSITION OF STRAND.		TOTAL MAXIMUM CURRENT. AMPERES.		Approximate Length. (Lead and Return) feet. mtrs.	Insulated with	HOW PROTECTED.
	No. per Pole.	Total Nominal Area per Pole Sq. mm.	No.	Diameter mm.	Circuit.	Rule.			
MAIN GENERATOR	1	300	61	2.5	305	310	Max. 50	Rubber	Lead covered and armoured with steel tape or wire.
EQUALISER CONNECTIONS		300	61	2.5	-	-	-	"	"
AUXILIARY GENERATOR	1	35	7	2.53	53	75	6	"	"
EMERGENCY GENERATOR									
ROTARY TRANSFORMER									
ENGINE ROOM	1	16	7	1.71	35	50	20	"	"
BOILER ROOM									
AUXILIARY SWITCHBOARDS	I	10	7	1.35	20	40	116	"	"
"	II & III	6	7	1.05	20	25	max 20	"	"
"	IV	16	7	1.71	30	50	20	"	"
"	V	6	7	1.05	15	25	42	"	"
"	VI	4	7	0.86	8	20	44	"	"
"	VII & VIII	10	7	1.35	22	40	Max. 80	"	"
ACCOMMODATION	1	1.5	7	0.52	Max 5	8	30	Rubber	Lead covered
	1	2.5	7	0.67	12	18	25	"	"
WIRELESS	1	10	7	1.35	25	40	40	"	Lead covered and armoured with steel tape or wire.
SEARCHLIGHT								"	"
MASTHEAD LIGHT	1	2.5	7	0.67	1	18	Max. 200	"	"
SIDE LIGHTS	1	1.5	7	0.52	1	18	25	"	"
COMPASS LIGHTS	1	1.5	7	0.52	1	18	11	"	"
POOP LIGHTS	1	1.5	7	0.52	1	8	168	"	"
CARGO LIGHTS									
ARC LAMPS									
HEATERS									

MOTOR CONDUCTORS.										
DESCRIPTION.	No. of Motors.	CONDUCTORS.		COMPOSITION OF STRAND.		TOTAL MAXIMUM CURRENT. AMPERES.		Approximate Length. (Lead and Return) feet. mtrs.	Insulated with	HOW PROTECTED.
		No. Per Pole.	Total Nominal Area per Pole Sq. mm.	No.	Diameter.	In Circuit.	Rule.			
BALLAST PUMP	1	1	25	7	2.13	55	65	26	Rubber	Lead covered and arm. with steel tape or wire.
MAIN BILGE LINE PUMPS	1	1	16	7	1.71	40	50	32	"	"
GENERAL SERVICE PUMP										
EMERGENCY BILGE PUMP										
SANITARY PUMP	1	1	6	7	1.05	22	25	20	"	"
CIRC. SEA WATER PUMPS	2	1	50	19	1.83	85	100	60	"	"
CIRC. FRESH WATER PUMPS										
AIR COMPRESSOR CO ₂	1	1	16	7	1.71	50	50	28	"	"
FRESH WATER PUMP	1	1	4	7	0.86	10	20	30	"	"
ENGINE TURNING GEAR	2	1	16	7	1.71	35	50	70	"	"
ENGINE REVERSING GEAR										
LUBRICATING OIL PUMPS	2	1	95	19	2.52	150	152	64	"	"
OIL FUEL TRANSFER PUMP	1	1	16	7	1.71	42	50	36	"	"
WINDLASS	1	1	150	37	2.2	220	-	138	"	"
WINCHES, FORWARD	2	1	50	19	1.83	100	-	Max. 46	"	"
"	4	1	35	7	2.53	65	-	68	"	"
WINCHES, AFT	2	1	25	7	2.53	65	-	14	"	"
"	2	1	50	19	1.83	65	-	20	"	"
STEERING GEAR—										
(a) MOTOR GENERATOR										
(b) MAIN MOTOR	1	2	35	7	2.53	60	75	300	"	"
WORKSHOP MOTOR	1	1	4	7	0.86	15	20	30	"	"
VENTILATING FANS	2	1	16	7	1.71	45	50	30	"	"
Oil heater	2	1	35	7	2.53	70	75	34	"	"
" apparatus	2	1	4	7	0.86	10	20	34	"	"
Main cables to winches	2	-	2 x 95	19	2.52	170	-	78	"	"
"	2	-	2 x 95	19	2.52	170	-	78	"	"
"	2	-	2 x 95	19	2.52	130	-	80	"	"
"	2	-	2 x 70	19	2.17	130	-	106	"	"
"	2	-	2 x 70	19	2.17	130	-	106	"	"

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All Conductors are of annealed copper conforming to British Standard Specification No. 7 (or International Electro-technical Commission Publication No. 28).

The Insulated Conductors are guaranteed to withstand the immersion and resistance tests specified in the Rules.

The foregoing is a correct description.

Ede Mathasson

Electrical Engineers.

Date *25-11-1936*

COMPASSES.

Distance between electric generators or motors and standard compass *7 metr.*

Distance between electric generators or motors and steering compass *6.5 "*

The nearest cables to the compasses are as follows:—

A cable carrying *2* Ampères *2* feet from standard compass *2* feet from steering compass.

A cable carrying *2* Ampères *2* feet from standard compass *2* feet from steering compass.

A cable carrying *2* Ampères *2* feet from standard compass *2* feet from steering compass.

Have the compasses been adjusted with and without the electric installation at work at full power.

Has the effect of switching on and off circuits, motors and other electro-magnetic apparatus within the vicinity of the compasses been noted.

The maximum deviation due to electric currents was found to be *2* degrees on *2* course in the case of the standard

compass, and *2* degrees on *2* course in the case of the steering compass.

ÖRESUND SVARVET

AKTIEBOLAG

de a. s. del

Builder's Signature.

Date *25th Nov. 1936*

Is this installation a duplicate of a previous case *No* If so, state name of vessel *✓*

General Remarks (State quality of workmanship, opinions as to class, &c.)

The above described electric installation has been installed onboard under my inspection and has been tested and found satisfactory.

*The materials and the workmanship are both good.
All the Rule requirements have been complied with.*

Noted

Y. R.

1.12.36

Total Capacity of Generators *222* Kilowatts.

The amount of Fee ...

£ 793.52 When applied for, *26th Nov. 1936*

Travelling Expenses (if any) £

4.12.36 When received, *7/12*

Committee's Minute

FRI. 11 DEC 1936

Assigned

See Memo Rpl 1510

Adlundén

Surveyor to Lloyd's Register of Shipping.



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