

## REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

6 - JUN 1930

Date of writing Report 4 June 1930 When handed in at Local Office

19

Port of

Stockholm

No. in Survey held at Stockholm

Date, First Survey

13 May

Last Survey

31 May

1930

Reg. Book.

on the

Steel Sc.

Virgo

(Number of Visits 5)

Built at Stockholm

By whom built

Aktieb. Finnboda Varf

Yard No.

312

When built

1930

Owners Stockholm Rederiaktieb. Soca

Port belonging to

Stockholm

Electric Light Installation fitted by

Rensjöns Elektromekaniska Verkstad

Contract No. ✓

When fitted

1930

Is the Vessel fitted for carrying Petroleum in bulk

no

## System of Distribution

Two conductor insulated system

Pressure of supply for Lighting

110

volts, Heating

volts, Power

volts.

Direct or Alternating Current, Lighting

direct current

Power

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 rating

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

Only one generator fitted

is an adjustable regulating resistance fitted in

series with each shunt field

yes

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

Are the lubricating arrangements of the generators as per Rule

yes

## Position of Generators

On the starboard side of the engine room.

is the ventilation 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

woodwork is protected by means of ~~iron~~ <sup>plate</sup> sheathing.

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

yes

Main Switch Boards, where placed

On the starboard side of the engine room, near the generator.

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

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

if situated near unprotected

woodwork is protected by means of ~~iron~~ <sup>asbestos</sup> and iron ~~plate~~ <sup>sheathing</sup>.

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

yes

, is all insulation of high dielectric strength and of

permanently high insulation resistance

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

and is the frame effectively earthed

yes

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

yes

, accessibility of all parts

yes

, absence of fuses on back of board

yes

, proportion of omnibus

bars

yes

, individual fuses to voltmeter, pilot or earth lamp

yes

, connections of switches

yes

Main Switchgear, description of switchgear for each generator and each outgoing circuit, and arrangement of equalizer switches

For the generator: A fuse on each pole and a double pole linked switch

For each outgoing circuit: A fuse on each pole and a single pole switch

Instruments on main switchboard

1 ammeters

1 voltmeters

✓ synchronising device for paralleling purposes.

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

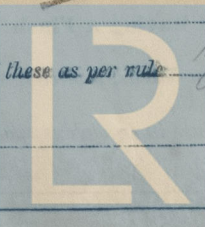
2 earth lamps

Switches, Circuit Breakers and Fusible Cut-outs, do these comply with the requirements of the Rules

yes

Joint Boxes Section and Distribution Boards, is the construction, protection, insulation, material, and position of these as per rule

yes



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

Fall of Pressure, state maximum between bus bars and any point of the installation under maximum load *2 Volts*

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

Paper Insulated Cables. If cables are paper covered, is the dielectric at the exposed ends of the conductor protected from moisture by being suitably sealed with insulating compound *✓*

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*

Support and Protection of Cables, state how the cables are supported and protected *The cables are supported by clips, cables are armoured and lead covered.*

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

Refrigerated Chambers, if lights are fitted, are the cables and fittings in accordance with the special requirements *✓*

Joints in Cables, state if any, and how made, insulated, and protected *No joints in main cables; the joints in the small cables are effected by means of water-tight junction 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 *armoured cables are used*, state the material of which the bushes are made *✓*

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

are their connections made as per Rule *✓*

Alternative Lighting, are the groups of lights in the propelling machinery space arranged as per Rule *Yes* *17/6/30*

Emergency Supply, state position and method of control of the emergency supply and how the generator is driven *✓*

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 *✓*

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 *No*

are any fittings placed in spaces where inflammable or explosive dust or gases are liable to be present, if so, how are they protected *No*

how are the cables led *✓*

where are the controlling switches situated *✓*

Searchlight Lamps, No. of *1*, whether fixed or portable *fixed*, are their fittings as per Rule *Yes*

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

Motors, are their working parts readily accessible *✓*, are the coils self-contained and readily removable for replacement *✓*

are the brushes, brush holders, terminals and lubricating arrangements as per Rule *✓*, are the motors placed in well-ventilated compartments in which inflammable gases cannot accumulate and clear of all inflammable material *✓*

are they protected from mechanical injury and damage from water, steam or oil *✓*, are their axes of rotation fore and aft *✓*

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 *✓*

, if not of this type, state distance of the combustible material horizontally or vertically above the motors *✓* and *✓*

Control Gear and Resistances, are the generator field and motor speed regulators, starters and controllers constructed and fitted as per Rule *✓*

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

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 *✓*

If portable lamps for use in dangerous spaces are supplied, are they of a type approved by the Home Office *✓*

## 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 ...	1	6.6	110	60	450	Vertical steam engine		
AUXILIARY ...								
EMERGENCY ...								
ROTARY TRANSFORMER								

## GENERATOR, LIGHTING AND HEATING CONDUCTORS.

DESCRIPTION.	CONDUCTORS.		COMPOSITION OF STRAND.		TOTAL MAXIMUM CURRENT.		Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED.
	No. per Pole.	Total Effective Area per Pole Sq. Ins.	No.	Diameter.	In Circuit.	Rule.			
MAIN GENERATOR ...	1	16	7	1.71	✓	48.7	4.5	Vulcanized rubber	Lead covered and armoured
EQUALISER CONNECTIONS ...									
AUXILIARY GENERATOR ...									
EMERGENCY GENERATOR ...									
ROTARY TRANSFORMER ...									
ENGINE ROOM ...	1	1.5	7	0.52	1.9	10.2	50	Vulcanized rubber	Lead covered and armoured
BOILER ROOM ...	1	1.5	7	0.52	2.3	10.2	65	ditto	ditto
AUXILIARY SWITCHBOARDS ...	1	4	7	0.85	11.5	22.1	14	ditto	ditto
	1	4	7	0.85	16.0	22.1	14	ditto	ditto
ACCOMMODATION ast. ...	1	1.5	7	0.52	8.4	10.2	60	Vulcanized rubber	Lead covered and armoured
" Amidship ...	1	1.5	7	0.52	5.4	10.2	38	ditto	ditto
" " ...	1	1.5	7	0.52	5.2	10.2	38	ditto	ditto
" " ...	1	1.5	7	0.52	4.3	10.2	40	ditto	ditto
Navigation board ...	1	1.5	7	0.52	2.0	10.2	44	ditto	ditto
WIRELESS ...	1	2.5	7	0.67	14	15.5	58	ditto	ditto
SEARCHLIGHT ...	1	1.5	7	0.52	0.9	10.2	42	ditto	ditto
MASTHEAD LIGHT ...	1	1.5	7	0.52	0.9	10.2	18	ditto	ditto
SIDE LIGHTS ...	1	1.5	7	0.52	0.5	10.2	42	ditto	ditto
COMPASS LIGHTS ...	1	1.5	7	0.52	1.0	10.2	46	ditto	ditto
POOP LIGHTS ...	1	1.5	7	0.52	3.4	10.2	fore 52 aft 9	ditto	ditto
CARGO LIGHTS ...	1	1.5	7	0.52	3.4	10.2	fore 52 aft 9	ditto	ditto
ARC LAMPS ...	1	1.5	7	0.52	3.4	10.2	fore 52 aft 9	ditto	ditto
HEATERS ...									

## MOTOR CONDUCTORS.

DESCRIPTION.	No. of Motors.	CONDUCTORS.		COMPOSITION OF STRAND.		TOTAL MAXIMUM CURRENT.		Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED.
		No. per Pole.	Total Effective Area per Pole Sq. Ins.	No.	Diameter.	In Circuit.	Rule.			
BALLAST PUMP ...										
MAIN BILGE LINE PUMPS ...										
GENERAL SERVICE PUMP ...										
EMERGENCY BILGE PUMP ...										
SANITARY PUMP ...										
CIRC. SEA WATER PUMPS ...										
CIRC. FRESH WATER PUMPS ...										
AIR COMPRESSOR ...										
FRESH WATER PUMP ...										
ENGINE TURNING GEAR ...										
ENGINE REVERSING GEAR ...										
LUBRICATING OIL PUMPS ...										
OIL FUEL TRANSFER PUMP ...										
WINDLASS ...										
WINCHES, FORWARD ...										
WINCHES, AFT ...										
STEERING GEAR—										
(a) MOTOR GENERATOR ...										
(b) MAIN MOTOR ...										
WORKSHOP MOTOR ...										
VENTILATING FANS ...										



All Conductors are of annealed copper conforming to British Standard Specification No. 7.

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

The foregoing is a correct description.

*A. Renström* Elektriska Verkstäder Electrical Engineers.

Date *4 June 1930*

#### COMPASSES.

Distance between electric generators or motors and standard compass

*From Engine room to flying bridge.*

Distance between electric generators or motors and steering compass

*From Engine room to flying bridge.*

The nearest cables to the compasses are as follows:—

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

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

A cable carrying ..... Ampères ..... feet from standard compass ..... 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 ..... degrees on ..... course in the case of the standard compass, and ..... degrees on ..... course in the case of the steering compass.

Builder's Signature. Date *4 June 1930*

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.)

*This electric light installation has been fitted on board under special survey and in all essential respects in accordance with the Rules of Lloyd's Register of Shipping. It has been tested in the presence of the Undersigned and found satisfactory. It is respectfully submitted, that a notation of Elec. Light be entered in the Register Book.*

*It is submitted that  
this vessel is eligible for  
THE RECORD. Elec. Light.*

*(R)  
10/6/30.*

Total Capacity of Generators *6.6* Kilowatts.

The amount of Fee ... *kr 182.-* : { When applied for, *4 June 1930.*  
When received, ..... 19.....  
Travelling Expenses (if any) £ : :

*A. J. Anderson*  
Surveyor to Lloyd's Register of Shipping.  
Assisted by *Mr. E. J. Anderson*

Committee's Minute

Assigned

*Elec. Lt.*



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