

Rpt. 13.

No. 10588

## REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office JUN 17 1938

Date of writing Report 10<sup>th</sup> June 1938 When handed in at Local Office

10

Port of Copenhagen

No. in Survey held at Olaus &amp; Skatshov

Date, First Survey 12/3-37

Last Survey 3<sup>rd</sup> June 1938

1938

Reg. Book.

(Number of Visits... 12...)

38620 on the Single Se. "IMPERIAL"

Tons { Gross 7217.04  
Net 4437.51

Built at Skatshov

By whom built Olaus Skatshov

Yard No. 84.

When built 1938

Owners Compania Suda Americana de Vapores

Port belonging to Valparaiso

Electric Light Installation fitted by The ship builders

Contract No. -

When fitted 1938

Is the Vessel fitted for carrying Petroleum in bulk no

System of Distribution 2 conductor insulated system

Pressure of supply for Lighting 220 volts, Heating 220 volts, Power 220 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 yes Have certificates of test results for machines under 100 kw. been submitted and

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

Have certificates for generators under 100 kw. been supplied and approved -

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 in the engine room floor level, 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. no woodwork etc.

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 a platform in the engine

rooms 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 no woodwork etc., 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

is it of an approved type Sin danyo, 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 - is the non-hygroscopic insulating material of an approved

type, 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, 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 no Main Switchgear, description of switchgear for each generator and each outgoing circuit, and arrangement of equalizer switches

Engines: - A 3 pole switch with overload & reversed current trips  
Outgoing circuits: - A 2 pole switch with fuses on each pole

Are turbine driven generators fitted with emergency trip switch as per rule - Are cupboards or compartments containing switchboards composed of

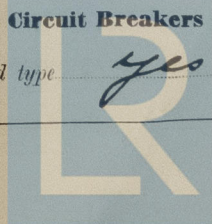
fire-resisting material or lined with approved material yes Instruments on main switchboard 7 ammeters 4

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

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

1 set of earthed lamps &amp; 1 ohm meter 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



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current protection devices been tested under working conditions *yes* are all fuses labelled as per rule *yes*

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

**Cables:** Single, twin, concentric, or multicore *single* are the cables insulated and protected as per Tables IV, V, X, XI, XII or XIII 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 *about 5 volts*

**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 laid under machines or floorplates *no* if so, are they adequately protected *yes*

Are cables in machinery spaces, galleys, laundries, bathrooms and lavatories lead covered or run in conduit *lead covered*

**Support and Protection of Cables,** state how the cables are supported and protected *run in conduit - lead covered - lead covered cable used - laid on steel plate - fixed by steel clips*

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 *no joints in cable*

**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 *placed in the funnel on the boat deck, worked by a 3-cyl 45CSA Diesel engine and connected to the light switch board by a change-over switch*

**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 (in the chart room)*

has each navigation lamp an automatic indicator as per Rule *yes* **Secondary Batteries,** are they constructed and fitted as per Rule *yes* are they ventilated 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 *protected by strong glass bulbs & metal grids* *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 *no* how are the cables led *yes*

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** *one* whether fixed or portable *fixed* 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* 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 *no* not of this type, state distance of the combustible material horizontally or vertically above the motors *yes* and have machines of over 100 BHP been inspected by the Surveyors during manufacture and testing *yes* have certificates for all motors for essential services been supplied and approved *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 flameproof type approved for use in dangerous spaces *yes*

**Spare Gear,** if the vessel is for open sea service have spares been supplied as per Rule *yes* are they suitably stored in dry situations *yes*

DESCRIPTION OF GENERATOR.	No. of	RATED AT				DRIVEN BY		WHERE DRIVEN BY AN INTERNAL COMBUSTION ENGINE.	
		Kilowatts.	Volts.	Amperes.	Revs. per Min.			Fuel Used.	Flash Point of Fuel.
MAIN ...	3	240	220	1090	400	3-cyl 25CSA Diesel		Cond. oil	above 150° F.
AUXILIARY ...									
EMERGENCY ...	1	24	220	109	1000	1-cyl 45CSA Diesel		Cond. oil	above 150° F.
ROTARY TRANSFORMER									

DESCRIPTION.	CONDUCTORS.		COMPOSITION OF STRAND.		TOTAL MAXIMUM CURRENT.		Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED.
	No. per Pole.	Total Nominal Area per Pole Sq. ins.	No.	Diameter.	In Circuit.	Rate.			
MAIN GENERATOR ...	3	400	91	2.36	1090	1095	37.18.18	India rubber	Lead covered & wire armoured
EQUALISER CONNECTIONS	1	240	61	2.36		667	185.9.9		
FAN SYSTEM 3-4-10	1	16	7	1.7	40	49	64		
EMERGENCY GENERATOR	1	70	19	2.16	109	124	3		
SMALL SANITARY PUMPS	1	4	7	0.85	16	22	22		
ROTARY TRANSFORMER	1	25	7	2.13	59	64	19		
ENGINE ROOM	1	10	7	1.35	19	38	28		
WORKSHOP	1	4	7	0.85	12	22	37		
BOILER ROOM	1	150	37	2.27	124	206	25		
FAN SYSTEM 1-2-6-7-8-9	1	150	37	2.27	124	206	25		
AUXILIARY SWITCHBOARDS	1	150	37	2.27	124	206	25		
REFRIG. MACHINERY	2	2x185	37	2.52	460	464	17		
MAIN LIGHT	1	120	37	2.03	175	177	28		
BILGE PUMPS ETC	2	2x150	37	2.27	404	412	29		
ENG. ROOM FANS	1	120	37	2.03	160	177	24		
FAN SYSTEM 5-8-9-10	1	150	37	2.27	202	206	12		
ACCOMMODATION 1st CLASS	1	6	7	1.05	13	29	20		
" " 2nd CLASS	1	10	7	1.35	19	38	72		
" " 3rd CLASS	1	10	7	1.35	19	38	56		
SMOKING ROOM	1	10	7	1.35	21	38	22		
LIGHT PROVISION ROOM	1	10	7	1.35	19	38	14		
REFRIG. HOLDS	1	6	7	1.05	14	29	1		
WIRELESS	1	10	7	1.35	30	38	34		
SEARCHLIGHT	1	25	7	2.13	50	65	46		
MASTHEAD LIGHT	1	1.5	1	1.38		9	84-165		
SIDE LIGHTS	1	1.5	1	1.38		9	26-26		
COMPASS LIGHTS	1	1.5	1	1.38		9	10		
POOP LIGHTS	1	1.5	1	1.38		9	175		
CARGO LIGHTS PROX. etc.	1	10	7	1.35	16	38	24		
OIL HEATERS & PURIFIERS	1	240	61	2.24	234	272	64		

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 Nominal Area per Pole Sq. ins.	No.	Diameter.	In Circuit.	Rate.			
BALLAST PUMP	1	1	25	7	2.13	60	65	12	India rubber	Lead covered & wire armoured
MAIN BILGE LINE PUMPS	1	1	10	7	1.35	36	38	7		
COLD SANIT. SERV. PUMP	1	1	10	7	1.35	30	38	3		
GENERAL SERVICE PUMP	1	1	25	7	2.13	50	65	36		
EMERGENCY BILGE PUMP	1	1	1.5	1	1.38	7	9	3		
SANITARY PUMP HOT SEAW.	2	1	95	19	2.53	140	152	2.4		
CIRC. SEA WATER PUMPS	1	1	95	19	2.53	140	152	8		
CIRC. FRESH WATER PUMPS	1	1	10	7	1.35	28	38	6		
REF. COOL. W. PUMP	1	1	15	1	1.38	5	9	1		
FRESH WATER PUMP HOT	1	1	16	7	1.7	48	49	64		
ENGINE TURNING GEAR	1	1	15	1	1.38	5	9	3		
COLD FRESH W. PUMP	1	1	15	1	1.38	5	9	3		
ENGINE REVERSING GEAR	2	1	185	37	2.52	233	233	47.49		
LUBRICATING OIL PUMPS	1	1	95	19	2.53	148	152	61		
OIL FUEL TRANSFER PUMP	1	1	150	37	2.27	248	280	36		
WINDLASS	1	1	150	37	2.27	248	280	36		
WINCHES, FORWARD CRANE	6x4	2	2x185	37	2.52	650	670	90		
" " MIDSHIP	2x2	1	120	37	2.03	175	177	28		
WINCHES, AFT	6x4	2	2x185	37	2.52	650	670	72		
STEERING GEAR—										
(a) MOTOR GENERATOR	1	1	95	19	2.53	180	200	98		
(b) MAIN MOTOR										
WORKSHOP MOTORS	3	1	15-15-4	1-1-7	1.38-0.85	6-8-2	9-22	2-1-1		
VENTILATING FANS ENG. ROOM	4	1	16	7	1.7	40	49	8-10-34-36		
CO. COMPRESSORS	2	1	150	37	2.27	200	206	20		
" " COOL. W. PUMPS	2	1	4	7	0.85	20	22	10-14		
" " BRINE PUMPS	2	1	25	7	2.13	56	65	6-6		
GALLEY RANGE	6x4	1	240	61	2.24	272	272	5		
CO. COMP. PROVS.	1	1	35	19	1.53	68	78	7		
OIL PURIFIERS	4	1	25	7	0.67	10	16	2-4-9-11		



The Electrical Equipment is installed in accordance with the approved plans.

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

The foregoing is a correct description.

AKTIESELSKABET  
NAKSKOV SKIBSVÆRFT

Electrical Engineers.

Date

#### COMPASSES.

Minimum distance between ~~electric generators or motors~~ <sup>Search light</sup> and standard compass 3 m

Minimum distance between ~~electric generators or motors~~ <sup>Search light</sup> and steering compass 4 m

The nearest cables to the compasses are as follows:—

A cable carrying 0.07 Ampères 7 inches <sup>the magnetic system in the</sup> feet from standard compass feet from steering compass.

A cable carrying 0.07 Ampères 7 inches <sup>the magnetic system in the</sup> 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 yes

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

The maximum deviation due to electric currents was found to be 0 degrees on any course in the case of the standard compass, and 0 degrees on any course in the case of the steering compass.

AKTIESELSKABET  
NAKSKOV SKIBSVÆRFT

Builder's Signature.

Date

Is this installation a duplicate of a previous case yes If so, state name of vessel St. Sophia - 12.35

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

The electric installation as described herein has been constructed and fitted under special survey in accordance with the Rules, the approved plans and the requirements contained in the Secretary's letters E dated 1/9. 1937.

The material used in construction is in accordance with the Rule and the workmanship is good

On completion the whole installation was tested under working conditions - found satisfactory

W. L. J.  
21/6/38.

Total Capacity of Generators 744 Kilowatts.

The amount of Fee ...

Fr. 1424.64

When applied for,  
15. 6. 38

Travelling Expenses (if any)

Fr. 60.00

When received,  
28. 6. 38

828.6

Surveyor to Lloyd's Register of Shipping.

Committee's Minute

FRI. 24 JUN 1938

Assigned

See Cpn. J.E. 10588



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