

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office JUN 17 1938

Date of writing Report 10th June 1938 When handed in at Local Office 10 Port of Copenhagen

No. in Survey held at Danish Station Date, First Survey 12/3-37 Last Survey 3rd June 1938
Reg. Book. (Number of Visits...12...)

38620 on the Single Se. "IMPERIAL"

Tons { Gross 7217.04
Net 4437.51

Built at Aarhus By whom built of Aarhus Skibsvaerk 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

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 no woodwork etc.
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 yes

Main Switch Boards, where placed on a platform in the engine room 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

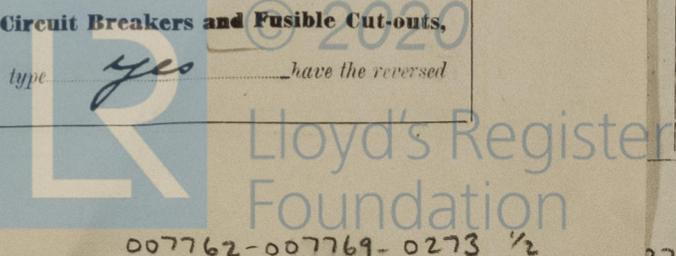
individual fuses to voltmeter, pilot or earth lamp yes, are moving parts of switches alive in the "off" position no are all screws and nuts securing connections effectively locked yes are any fuses fitted on the live side of switches no

Main Switchgear, description of switchgear for each generator and each outgoing circuit, and arrangement of equalizer switches
For generators: 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 earth lamps & 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 -



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 Wm. Announced - lead covered cables used laid on steel plates - 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 dished 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 coal deck, worked by a 3-cyl 45CSA Diesel engine and connected to the light switch board by a changeover 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

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 woodwork etc 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

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	240	220	1090	400	3-cyl 25CSA Diesel	Comd. oil	above 150° F	
AUXILIARY									
EMERGENCY	1	24	220	109	1000	1-cyl 45CSA Diesel	Comd. oil	above 150° F	
ROTARY TRANSFORMER									

DESCRIPTION.	GENERATOR, LIGHTING AND HEATING CONDUCTORS.									
	CONDUCTORS.			COMPOSITION OF STRAND.		TOTAL MAXIMUM CURRENT.		Approximate Length. (Lead and Return.)	Insulated with	HOW PROTECTED.
	No. per Pole.	Total Nominal Area per Pole Sq. ins.	Area per Strand 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	400	91	2.36		667	185.9.9			
FAN SYSTEM 5-4-10	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			
GALLEY SUBBOARDS	1	10	7	1.35	19	38	28			
ENGINE ROOM	1	4	7	0.85	12	22	37			
WORKSHOP	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	2	2x185	37	2.52	460	464	17			
REFRIG. MACHINERY	1	120	37	2.03	175	177	28			
MAIN LIGHT	2	2x150	37	2.27	404	412	29			
BILGE PUMPS ETC	1	120	37	2.03	160	177	24			
ENG. ROOM FANS	1	150	37	2.27	202	206	12			
FAN SYSTEM 5-8-9	1	6	7	1.05	13	29	20			
ACCOMMODATION 1st CLASS	1	10	7	1.35	19	38	72			
" " 2nd 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.	MOTOR CONDUCTORS.									
	CONDUCTORS.			COMPOSITION OF STRAND.		TOTAL MAXIMUM CURRENT.		Approximate Length. (Lead and Return.)	Insulated with	HOW PROTECTED.
	No. of Motors.	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		
WATER COMPRESSOR	1	1	15	1	1.38	5	9	1		
FRESH WATER PUMP H.O.T.	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	2	1	185	37	2.52	233	233	47.49		
ENGINE REVERSE GEAR	1	1	95	19	2.53	148	152	61		
LUBRICATING OIL PUMPS	1	1	180	37	2.27	248	280	36		
OIL FUEL TRANSFER PUMP	1	1	120	37	2.03	175	177	28		
WINDLASS	1	1	150	37	2.27	248	280	36		
WINCHES, FORWARD & CRANE	6+4	2	2x185	37	2.52	650	670	90		
" " MIDSHIP	2+2	1	120	37	2.03	175	177	28		
WINCHES, AFT & ...	6+4	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		
CO2 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	6 KW	1	240	61	2.24	272	272	5		
CO2 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.

Anders Mikkelsen
AKTIESELSKABET
NAKSKOV SKIBSVÆRFT

Electrical Engineers.

Date

COMPASSES.

Minimum distance between *Search light* electric generators or motors and standard compass 3 m

Minimum distance between *Search light* electric generators or motors and steering compass 4 m

The nearest cables to the compasses are as follows:—

A cable carrying 0.07 Ampères *7 inches* *Magnetic system in the* feet from standard compass feet from steering compass.

A cable carrying 0.07 Ampères *7 inches* *Magnetic system in the* 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.

Anders Mikkelsen
AKTIESELSKABET
NAKSKOV SKIBSVÆRFT

Builder's Signature.

Date

Is this installation a duplicate of a previous case *yes* If so, state name of vessel *Stropia for - 1/2 Aconagua (Ships 8235)*

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. H. 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*

J. Langkjaer Jensen
Surveyor to Lloyd's Register of Shipping.

Committee's Minute *FRI. 24 JUN 1938*

Assigned *See Cpn. J.E. 10588*

200.12.36—Transfer. The Surveyors are requested not to write on or below the space for Committee's Minute