

# REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Date of writing Report 14<sup>th</sup> June 1928 When handed in at Local Office 10 Port of Copenhagen Received at London Office 23<sup>rd</sup> June 1928

No. in Survey held at Copenhagen Date, First Survey 2<sup>nd</sup> May Last Survey 28<sup>th</sup> June 1928  
Reg. Book. 42833 on the Steel Twin Screw Motor Vessel "SUD PACIFICO" (Number of Visits 23)

Built at Copenhagen By whom built Akt. Burmeister & Wain's Maskin og Skibsbyggeri Yard No. 547. When built 1928  
Owners 1/3 Linea Sud Americana (Ivar An. Christensen) Port belonging to Oslo, Norway  
Tons { Gross 4638.66  
Net 2771.24

Electric Light Installation fitted by Akt. Burmeister & Wain's Maskin og Skibsbyggeri. Contract No. 547. When fitted 1928

System of Distribution Two conductors, insulated system.

Pressure of supply for Lighting 110 volts, Heating  volts, Power 220 volts.

Direct or Alternating Current, Lighting Direct current. Power Direct current.

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. 0 per cent, 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

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 machinery space.

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  
Not situated near unprotected woodwork or other combustible material., 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 In the machinery space.

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 Not situated near unprotected woodwork or other combustible material.

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 Yes

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

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 each generator: a three pole circuit breaker with overload and reversed current trip.

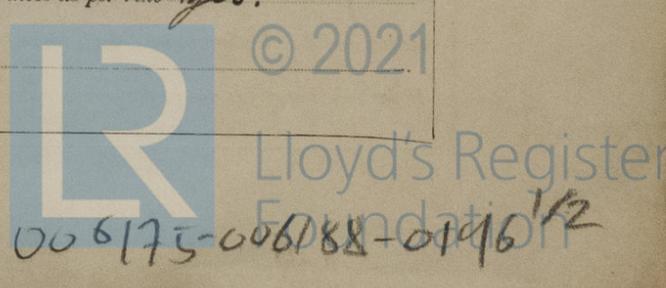
For each outgoing circuit: a double pole switch and a double pole fuse.

Instruments on main switchboard 5 ammeters 4 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 Two Voltmeters, - one for 220 Volts and one for 110 Volts are provided with Ohm scale and the switchboard is provided with 2 sets of earth testing 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.



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

Fall of Pressure, state maximum between bus bars and any point of the installation under maximum load *abt 5 Volt.*

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 *No paper insulated cables used.*

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 screwed clips, in the holds and where necessary protected by sheet iron casings or iron tubes.*

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 *yes*

Joints in Cables, state if any, and how made, insulated, and protected *No joints in cables.*

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 *No earthing connections.*

are their connections made as per Rule *✓*

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 *✓*

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 *✓*, whether fixed or portable *✓*, are their fittings as per Rule *✓*

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 *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 *not situated near unprotected woodwork or other combustible material* 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 *yes*

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 *Flash point of oil fuel above 150° F.*

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.	Amps.		Fuel Used.	Flash Point of Fuel.
MAIN	3	180 KW	220	455	Transitory Diesel engines.	Crude oil	above 150° F.
AUXILIARY	1	4	110	36.5	A petrol motor	Petrol	" "
EMERGENCY							
ROTARY TRANSFORMER	1	8	220/110	73	Electro motor.		

LIGHTING AND HEATING CONDUCTORS.

Ref. No.	DESCRIPTION.	No. of Conductors.	Effective Area of each Conductor Sq. mm.	COMPOSITION OF STRAND.		Total Maximum Current Amps.	Approximate Length (Lead and Return) Meters.	Insulated with	HOW PROTECTED.
				No.	Diameter in mm.				
	MAIN GENERATOR	2	180	37	2.52	180	40	Polyvinyl rubber	Lead covered & braided steel wire armoured and braided.
	EQUALISER CONNECTIONS	1	180	37	2.52	180	20	" "	" "
	AUXILIARY GENERATOR	1	10	7	1.35	36.5	abt 8.	" "	" "
	EMERGENCY GENERATOR	1	16	7	1.70	49	8	" "	" "
	ROTARY TRANSFORMER	1	35	19	1.53	73	80	" "	" "
	AUXILIARY SWITCHBOARDS								
	ENGINE ROOM	1	2.5	7	0.67	13	80	" "	" "
	BOILER ROOM								
	ACCOMMODATION AMIDSHIPS	1	6	7	1.05	18	98	" "	" "
	OFFICERS	1	6	7	1.05	14	1	" "	" "
	AFT CREWS	1	2.5	7	0.67	9	128	" "	" "
	NAVIGATION	1	2.5	7	0.67	3.2	114	" "	" "
	WIRELESS	1	10	7	1.35	25	12	" "	" "
	SEARCHLIGHT								
	MASTHEAD LIGHT	1	1.5	1	1.38	0.55	106	" "	" "
	SIDE LIGHTS	1	1.5	1	1.38	0.55	22	" "	" "
	COMPASS LIGHTS	1	1.5	1	1.38	0.15	10	" "	" "
	POOP LIGHTS	1	1.5	1	1.38	0.3	200	" "	" "
	CARGO LIGHTS	1	1.5	1	1.38	1.8	40	" "	" "
	ARC LAMPS								
	HEATERS	1	2.5	7	0.67	2.27	66	" "	" "

MOTOR CONDUCTORS

Ref. No.	DESCRIPTION.	No. of Motors.	Effective Area of each Conductor Sq. mm.	COMPOSITION OF STRAND.		Total Maximum Current Amps.	Approximate Length (Lead and Return) Meters.	Insulated with	HOW PROTECTED.
				No.	Diameter in mm.				
	BALLAST PUMP	1	25	7	2.13	58	44	Polyvinyl rubber	Lead covered and braided steel wire armoured
	MAIN BILGE LINE PUMPS								
	GENERAL SERVICE PUMP								
	EMERGENCY BILGE PUMP								
	BILGE & SANITARY PUMPS	1	10	7	1.35	35	54	" "	" "
	CIRC. SEA WATER PUMPS								
	CIRC. FRESH WATER PUMPS								
	AIR COMPRESSOR								
	FRESH WATER PUMP								
	ENGINE TURNING GEAR	2	6	7	1.05	20	30	" "	" "
	ENGINE REVERSING GEAR								
	COOLING WATER AND LUBRICATING OIL PUMPS	2	70	19	2.16	118	56	" "	" "
	OIL FUEL TRANSFER PUMP	1	10	7	1.35	35	28	" "	" "
	WINDLASS & 2 WINCHES	3	150	37	2.27	194	135	" "	" "
	WINCHES, FORWARD	2	150	37	2.27	194	77	" "	" "
	WINCHES, AFT	2	150	37	2.27	194	75	" "	" "
	STEERING GEAR								
	(a) MOTOR GENERATOR								
	(b) MAIN MOTOR	1	25	7	2.13	55	166	" "	" "
	WORKSHOP MOTOR etc.	6	35	19	1.53	73	7	" "	" "
	VENTILATING FANS								
	REFRIGERATING MACHINERY	2	10	7	1.35	38	60	" "	" "
	COMPRESSOR	1	10	7	1.35	26	4	" "	" "
	COOLING WATER PUMP	1	2.5	7	0.67	12	8	" "	" "
	TURNING LATHE	1	2.5	7	0.67	9.5	25	" "	" "
	DRILLING MACHINE	1	1.5	1	1.38	4	32	" "	" "
	OIL PURIFIERS	2	2.5	7	0.67	8	35	" "	" "
	OIL HEATERS	1	16	7	1.70	41	50	" "	" "
	WINCHES AMIDSHIPS	1	50	19	1.83	98	37	" "	" "

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.

**AKTIESELSKABET  
 BURMEISTER & WAINES  
 MASKIN- OG SÆLSEVÆRERI**

Electrical Engineers. Date \_\_\_\_\_

**COMPASSES.**

Distance between electric generators or motors and standard compass *About 85 feet from generator and abt 35 feet from electro motor.*

Distance between electric generators or motors and steering compass *About 82 feet from generator and abt 22 feet from electro motor.*

The nearest cables to the compasses are as follows:—

A cable carrying *3.2* Amperes *8* feet from standard compass *14* feet from steering compass.

A cable carrying *0.15* Amperes *to the lamps* from standard compass *and in feet from steering compass.*

A cable carrying *✓* Amperes *✓* 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 *all* course in the case of the standard compass, and *0* degrees on *all* course in the case of the steering compass.

**AKTIESELSKABET  
 BURMEISTER & WAINES  
 MASKIN- OG SÆLSEVÆRERI**

Builder's Signature. Date \_\_\_\_\_

Is this installation a duplicate of a previous case *yes* If so, state name of vessel *M/S "SUD ATLANTICO"*  
*Exp. Oct. 13 1920.*

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

*The whole electric lighting and power installation as above described has been fitted in accordance with the requirements of Rules, the approved plan, and the Secretary's letter E. dated the 6<sup>th</sup> December 1927.*

*The material used in the installation and the workmanship throughout are of good description in every respect.*

*The whole electric lighting and power installation has been tested under full power working condition and found to work satisfactorily.*

*Recommend the vessel to have notation in the Register Book of "ELECTRIC LIGHT".*

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

Total Capacity of Generators *203* Kilowatts. *24/7/28.*

The amount of Fee ... *£ 665.66* : When applied for, \_\_\_\_\_  
 Travelling Expenses (if any) £ : : When received, *15.10.28*  
*As. J. Beck*  
 Surveyor to Lloyd's Register of Shipping.

FRI 27 JUL 1928

Committee's Minute

Assigned *Elec Light*

Im. 228.—Transfer.  
 (The Surveyors are requested not to write on or below the space for Committee's Minute.)



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