

# REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office 6 SEP 1927

Date of writing Report Aug 30 1927 When handed in at Local Office Sep 2 1927 Port of Trieste

No. in Survey held at Molfalona Date, First Survey June 13 Last Survey Aug 9 1927

Reg. Book. on the T. S. M. S. Ararangua Tons { Gross 4872 Net 2974

built at Molfalona By whom built Cantiere Nav. Tri. Yard No. 175 When built 1927

owners Lloyd Nacional S. A. Port belonging to Rio de Janeiro

Electric Light Installation fitted by Cantiere Navale Triestino Contract No. When fitted 1927

System of Distribution Two wire Pressure of supply for Lighting 230 volts, Heating — volts, Power 230 volts.

Direct or Alternating Current, Lighting direct Power direct

alternating current system, state frequency of periods per second 7.

Is 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 7.

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,

not circuited, or touched yes Are the lubricating arrangements of the generators as per Rule yes

Position of Generators in E.R. platform port side

is the ventilation in way of the generators satisfactory yes, are they clear of all inflammable material yes

are they situated near unprotected woodwork or other combustible material, state distance of same horizontally from or vertically above the generators

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

are their axes of rotation fore and aft yes

Are the bedplates and frames of the generating plant efficiently earthed yes are the prime movers and

respective generators in metallic contact yes

Location of Switch Boards, where placed Power S.B. in E.R. at the lower deck flat level. Light S.B. in

E.R. at the upper deck If the generators and main switchboard are not placed in the same compartment, is each generator provided with

double pole switches & fuses for Light S.B.

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

work or other combustible material, state distance of same horizontally from or vertically above the switchboards 7. and 7.

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

of mica or micanite or other non-hygroscopic insulating material, and the slab similarly insulated from its framework yes

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

yes, individual fuses to voltmeter, pilot or earth lamp yes, connections of switches yes

in Switchgear, description of switchgear for each generator and each outgoing circuit, and arrangement of equalizer switches. Double pole air

circuit breaker with overload and reverse current trip for each generator.

double pole link switches and fuse to each pole for each outgoing wire.

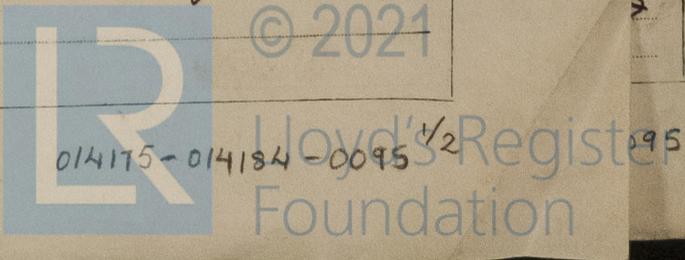
Instruments on main switchboard 3 ammeters 4 voltmeters — synchronising device for paralleling purposes.

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

meter

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

at 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 *yes*

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

**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 *none*

**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 *armoured or lead covered cables supported by clips*

If cables are run in wood casings, are the casings and caps secured by screws *none*, 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 *WT 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 *yes* state the material of which the bushes are made *lead or hard wood*

**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*

**Emergency Supply,** state position and method of control of the emergency supply and how the generator is driven *one 16 kw generator placed in the Main Deck B Surface, driven by a hot bulb motor connected to the Light & P with a double throw double pole link switch with fuses*

**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 *none*

**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 *none*, 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 *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 *totally enclosed*, 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 *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 *✓*

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	3	8084	230	365	275	Hot bulb Engine	kerosene oil	
AUXILIARY								
EMERGENCY	1	1617	230	74	425	Hot bulb Hot Motor	kerosene oil	
ROTARY TRANSFORMER								

LIGHTING AND HEATING CONDUCTORS.

Ref. No.	DESCRIPTION.	No. of Conductors.	Effective Area of each Conductor. Sq. Ins.	COMPOSITION OF STRAND.		Total Maximum Current. Ampères.	Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED.	
				No.	Diameter.					
8	MAIN GENERATOR	2	0.6	✓	91	0.093	365	160	rubber	armoured
	EQUALISER CONNECTIONS	1	0.3	✓	37	0.103			rubber	armoured
	AUXILIARY GENERATOR									
26	EMERGENCY GENERATOR	2	0.06	✓	19	0.064	74	120	rubber	armoured
	ROTARY TRANSFORMER									
21	light AUXILIARY SWITCHBOARDS	2	0.06	✓	19	0.064	74	80	rubber	armoured
20	ENGINE ROOM	2	0.007	✓	7	0.036	11	1	rubber	armoured
	BOILER ROOM									
24 (21)	ACCOMMODATION	2	0.007	✓	7	0.036	10	120	rubber	arm. & lead cover.
25	"	2	0.007	✓	7	0.036	11	120	rubber	" " "
23	" Saloon	2	0.007	✓	7	0.036	8	130	rubber	" " "
27	" Decks	2	0.007	✓	7	0.036	11	120	rubber	" " "
28	"	2	0.007	✓	7	0.036	13	120	rubber	" " "
29	" Navigation	2	0.002	✓	3	0.029	2	180	rubber	" " "
31	" Boat Deck	2	0.002	✓	3	0.029	4	170	rubber	" " "
22	Lifeboat Lights	2	0.002	✓	3	0.029	2	170	rubber	armoured
30 (21)	WIRELESS	2	0.007	✓	7	0.036	11	180	rubber	armoured
12	SEARCHLIGHT	2	0.035	✓	19	0.50	50	250	rubber	armoured
29	MASTHEAD LIGHT	2	0.002	✓	3	0.029	0.5	300	rubber	armoured
29	SIDE LIGHTS	2	0.002	✓	3	0.029	0.25	170	rubber	arm. & lead cover
29	COMPASS LIGHTS	2	0.001	✓	1	0.036	0.12	170	rubber	✓
29	POOP LIGHTS	2	0.002	✓	1	0.036	0.12	200	rubber	armoured
19	CARGO LIGHTS	2	0.007	✓	7	0.036	6	150	rubber	armoured
	ARC LAMPS									
	HEATERS									

MOTOR CONDUCTORS.

Ref. No.	DESCRIPTION.	No. of Motors.	Effective Area of each Conductor. Sq. Ins.	COMPOSITION OF STRAND.		Total Maximum Current. Ampères.	Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED.	
				No.	Diameter.					
Aux SB										
9-2	BALLAST PUMP	1	0.10	✓	19	0.083	103	85	rubber	armoured
10-2	MAIN BILGE LINE PUMPS	1	0.10	✓	19	0.083	103	80	rubber	armoured
1617-3	Refrig. Brine Condens. Section Pump	2	0.004	✓	7	0.029	18	90	rubber	armoured
15-3	Refrig. Fan Motor	1	0.003	✓	1	0.064	10	90	rubber	armoured
21-1	SANITARY PUMP	1	0.007	✓	7	0.036	24	85	rubber	armoured
11-3	CIRC. SEA WATER PUMPS	1	0.10	✓	19	0.083	103	80	rubber	armoured
14-3	CIRC. FRESH WATER PUMPS	1	0.004	✓	7	0.029	18	90	rubber	armoured
7	AIR COMPRESSOR	1	0.6	✓	91	0.093	376	90	rubber	armoured
18/19-1	FRESH WATER PUMP	2	0.007	✓	7	0.036	24	20	rubber	armoured
20-1	0.7 Filter ENGINE TURNING GEAR	1	0.002	✓	3	0.029	6	40	rubber	armoured
	ENGINE REVERSING GEAR									
12-2	LUBRICATING OIL PUMPS	1	0.06	✓	19	0.064	71	70	rubber	armoured
13-2	OIL FUEL TRANSFER PUMP	1	0.007	✓	7	0.036	24	75	rubber	armoured
12	WINDLASS	1	0.22	✓	37	0.083	184	300	rubber	armoured
+ 11	WINCHES, <del>to the</del> S.B.	4	0.3	✓	37	0.103	388	200	rubber	armoured
	WINCHES, AFT									
	STEERING GEAR									
	(a) MOTOR GENERATOR									
13	(b) MAIN MOTOR	1	0.06	✓	19	0.064	79	200	rubber	armoured
14	WORKSHOP MOTOR	3	0.007	✓	7	0.036	12	50	rubber	armoured
17	VENTILATING FANS	5	0.035	✓	19	0.50	57	150	rubber	armoured
16	Galley	3	0.0145	✓	7	0.052	36	100	rubber	armoured
15	Laundry	3	0.0145	✓	7	0.052	36	200	rubber	armoured
42.5	Hydraulic Crane Pumps	2	0.4	✓	61	0.093	283	60	rubber	armoured
22-23-11	From SB to Winches	2	0.10	✓	19	0.083	98	-	rubber	armoured
24-11	" " "	1	0.06	✓	19	0.064	79	-	rubber	armoured
25-11	" " "	1	0.04	✓	19	0.052	63	-	rubber	armoured
6	Refrig. Motor	1	0.150	✓	37	0.072	152	90	rubber	armoured

+ 1/2 hour rating

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.

**Cantiere Navale Triestino**

*H. Rokin*

Electrical Engineers.

Date

**COMPASSES.**

Distance between electric generators or motors and standard compass 120 feet

Distance between electric generators or motors and steering compass 110 feet

The nearest cables to the compasses are as follows:—

A cable carrying 2 Ampères 10 feet from standard compass 8 feet from steering compass.

A cable carrying 0.12 Ampères in the feet from standard compass in the 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 no

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.

**Cantiere Navale Triestino**

*H. Rokin*

Builder's Signature.

Date

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 installation has been made in accordance with the Rule. The material and workmanship are good; the whole installation and generators have been tested under full working condition and found satisfactory.*

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

*J. J.*  
7/9/27

Total Capacity of Generators 256 Kilowatts.

The amount of Fee ... Lire 3904.- When applied for, 30.8.27

Travelling Expenses (if any) £ : : 26.9.27 When received, 26.9.27

*R. Stefanovich*  
Surveyor to Lloyd's Register of Shipping

1m.127.—Transfer. (The Surveyors are requested not to write on or below the space for Committee's Minute.)

Committee's Minute FRL 16 SEP 1927

Assigned Elec Light



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