

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

No. in Survey held at Monfalcone Date, First Survey June 13 Last Survey Aug 9 1927  
Reg. Book. (Number of Visits... 240)

on the *T. S. M. S. Ararangua* (Gross 4872)

built at *Moufalcone* By whom built *Lauhere Nav. Tri.* Yard No. *175* When built *1927* (Net. *2974*)

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

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

stem of Distribution *Two wire* ✓

Pressure of supply for Lighting 230 ✓ volts, Heating — volts, Power 230 ✓ volts.

rect or Alternating Current, Lighting *direct* ✓ Power *direct* ✓

alternating current system, state frequency of periods per second  $\gamma$ .

is the **Automatic Governor** been tested and found efficient when the whole load is suddenly thrown on or off yes ✓

nerators, do they comply with the requirements regarding rating yes ✓, are they compound wound yes ✓

they over compounded 5 per cent. yes, if not compound would 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

ies with each skunt 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,

Are the lubricating arrangements of the generators as per Rule yes

sition of Generators in E R platform port side

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

*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.....

their axes of rotation fore and aft. *yes*

Nothing, are the bedplates and frames of the generating plant efficiently earthened yes are the prime movers and

respective generators in metallic contact. yes

In Switch Boards, where placed *Power PB in ER at the lower deck flat level. Light PB. in*

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

use on each insulated pole as near as possible to the terminals of the generator, additional to that provided on the main switchboard. *Double for Phase 2 / wires for Right L.*

boards, are they placed in accessible positions, free from inflammable gases and acid fumes yes

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  $\frac{7}{8}$  and  $\frac{7}{8}$ .

they constructed wholly of durable, non-ignitable non-absorbent materials slate, is all insulation of high dielectric strength and of

anent high insulation resistance yes, if semi-insulating material is used, are all conducting parts insulated from the slab

mica or micaite 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-

it breaker with overload and reverse current trip for each generator

will take little milk and live to each sole for each outgoing circ.

the 100 is with hundreds and tens. 1000 is with thousands

instruments on main switchboard	3	ammeters	4	voltmeters	—	synchronizing device for paralleling purposes.
Light "	1	"	1	"		2400 Volts

**th Testing,** state what means are provided at the main switchboard for indicating the state of the insulation of the system. *contacts for volt.*

mekr

**Switches, 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 Port side, driven by a hot bulb motor connected to the Light & P with a double throw double pole 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	80.84	230	365	275	Triplex Engine	diesel oil		
AUXILIARY ...									
EMERGENCY ...	1	16.17	230	74	425	Hot bulb Triplex Motor	diesel 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, Amperes.	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 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
18	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, Amperes.	Approximate Length, (Lead and Return), Feet.	Insulated with	HOW PROTECTED.
				No.	Diameter.				
Aux S.B.									
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
16/17-3	Refrig. Brine Pump	2	0.004	✓ 7	0.029	18	90	rubber	armoured
	Refrig. Fan Motor	1	0.003	✓ 7	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	1	0.002	✓ 3	0.029	6	40	rubber	armoured
	ENGINE TURNING GEAR								
	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, 6 to the 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	300	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
4 & 5	Hydraulic Crane Pumps	2	0.4	61	0.093	283	60	rubber	armoured
22 & 23-11	From S.B. 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**

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**

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.

Total Capacity of Generators 256 Kilowatts.

The amount of Fee ...

£ 3904.-

When applied for,  
30.8.27

Travelling Expenses (if any) £

When received,  
26.9.27

Committee's Minute

FRL 16 SEP 1927

Assigned

Elec Light

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



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