

REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

No. 7365

-1 DEC 1926

Date of writing Report Nov 22 1926 When handed in at Local Office Nov 29 1926 Port of Trieste
 Received at London Office.....

No. in Survey held at Trieste Date, First Survey Feb 2 Last Survey Nov 9 19 26
 Reg. Book. 63263 on the MOTOR VESSEL "ARABIA" (Number of Visits... twelve.)

Built at Trieste By whom built Stabilimenti Tecnici Triestini Yard No. 747 Tons { Gross 7025
 Owners Marittima Italiana When built 1926
 Port belonging to Genoa

Electric Light Installation fitted by Stabilimenti Tecnici Triestini Contract No. ✓ When fitted 1926

System of Distribution Two wire direct current ✓
 Pressure of supply for Lighting 110 ✓ This voltage changed to 220 ✓ See TRIESTE report No. 12417 dated 27/2/39 220 ✓ 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 rating 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 ✓

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 Engin room. Two on port side - one on starboard side Yes ✓
 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
 ✓ and ✓, 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 belylats 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 Port side of engine room - forward. Switchboard placed
transversely in slot.

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 ✓

woodwork or other combustible material, state distance of same horizontally from or vertically above the switchboards ✓ and ✓, are they constructed wholly of durable, non-ignitable non-absorbent materials Marble ✓

permanently high insulation resistance Yes ✓, is all insulation of high dielectric strength and of with mica or micavile 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 ✓, 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. Generators.

double pole circuit breakers with maximum and minimum trips and with equalizer
switches electrically arranged as per Rule. Outgoing circuits - two pole knife switches with quick
release.

Instruments on main switchboard 4 ammeters 2 voltmeters ✓ synchronising device for paralleling purposes.

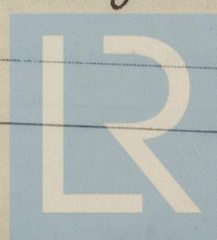
Earth Testing, state what means are provided at the main switchboard for indicating the state of the insulation of the system Lamps to earth.

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 ✓

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Lloyd's Register
Foundation

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 *4 Volts*

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 *Galvanised iron clips and protected by sheet iron when necessary.*

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 *None*

Joints in Cables, state if any, and how made, insulated, and protected *None*

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 *Wood*

Earthing Connections, state what earthing connections are fitted and their respective sectional areas *Dynamo bolted down to ship's structure and frame of main switchboard earthed.*

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 *None*

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 where 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 *None.*

how are the cables led

where are the controlling switches situated *✓*

Searchlight Lamps, No. of *1*, whether fixed or portable *portable*, 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 *✓*, if not of this type, state distance of the combustible material horizontally or vertically above the motors *✓* and *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 *✓*

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	66	220	300	420	Diesel engine	Diesel oil	Above 180°F	
AUXILIARY	✓								
EMERGENCY	✓								
ROTARY TRANSFORMER	1	N. 18	220	61	1400	Lighting supply voltage changed to 220V. See TRIESTE report No 12417 dated 27-2-39			
LIGHTING AND HEATING CONDUCTORS.									
Ref. No.	DESCRIPTION.	No. of Conductors.	Effective Area of each Conductor Sq. mm.	COMPOSITION OF STRAND.		Total Maximum Current Amperes.	Approximate Length (Lead and Return.) Feet. m.	Insulated with	HOW PROTECTED.
				No.	Diameter.				
	MAIN GENERATOR...	1	324 ✓	61	2.5 mm	300	36, 46, 82 m	I. R.	Lead & galv. steel wire
	EQUALISER CONNECTIONS		128	37	2.1	✓	18, 43, 41	do	do
	AUXILIARY GENERATOR	✓							
	EMERGENCY GENERATOR	✓							
	ROTARY TRANSFORMER...	N. 1	38 ✓	19	1.6	61	30 m	do	do
	AUXILIARY SWITCHBOARDS	9	85 ✓	19	2.1	120	30	do	do
	ENGINE ROOM	✓							
	BOILER ROOM	1	9 ✓	7	1.3	87	12	do	Lead & steel wire net
	ACCOMMODATION	✓							
	Cabin - engine room	1	6.4 ✓	7	1.1	24	96	do	Lead & steel wire net
	do saloon, mess								
	cabin & bridge	1	9.5 ✓	7	1.3	21	158		do.
	Sketch for portable lighting oil pumps	1	25 ✓	19	1.3	50	70		Lead & galv. steel wire
	WIRELESS	1	6.7 ✓	7	1.1	15	132		do
	SEARCHLIGHT	1	14.7 ✓	7	1.6	45	220		do.
	MASTHEAD LIGHT...	2	2 ✓	1	1.6	5	for 68 ft 140		Lead & galv. steel wire
	SIDE LIGHTS...	1	2 ✓	1	1.6	5	30		do
	COMPASS LIGHTS	1	1.5 ✓	1	1.4	5	12		do
	POOP LIGHTS	1	2 ✓	1	1.6	5	200		do
	CARGO LIGHTS	FORW. AFT.	25 ✓	19	1.3	37	192		do.
	ARC LAMPS	None.							
	HEATERS	✓							
MOTOR CONDUCTORS.									
Ref. No.	DESCRIPTION.	No. of Motors.	Effective Area of each Conductor Sq. mm.	COMPOSITION OF STRAND.		Total Maximum Current Amperes.	Approximate Length (Lead and Return.) Feet. m.	Insulated with	HOW PROTECTED.
				No.	Diameter.				
	BALLAST PUMP	1	4.9 ✓	19	1.85	95	22	I. R.	Lead & galv. steel wire
	MAIN BILGE LINE PUMPS	1	6.7 ✓	7	1.1	19	28	do	do
	GENERAL SERVICE PUMP	1	14 ✓	7	1.6	38	16	do	do.
	EMERGENCY BILGE PUMP	✓							
	SANITARY PUMP	✓							
	CIRC. SEA WATER PUMPS	2	38 ✓	19	1.6	70	18 m 26 m	do	do.
	CIRC. FRESH WATER PUMPS	✓							
	AIR COMPRESSOR	✓							
	FRESH WATER PUMP	1	2.5 ✓	1	1.8	7.6	26 m	do	do.
	ENGINE TURNING GEAR	1	6.7 ✓	7	1.1	26.5	60	do	do.
	ENGINE REVERSING GEAR	✓							
	LUBRICATING OIL PUMPS	2	14 ✓	7	1.6	38	32 36	do	do.
	OIL FUEL TRANSFER PUMP	1	25 ✓	19	1.3	57	17	do	do.
	WINDLASS	1	15.9 ✓	37	2.35	177	40	do	do.
	WINCHES, FORWARD	A. 4 B. 2 C. 2	15.9 6.5 6.5 ✓	37 19 19	2.35 2.1 2.1	190 114 114	132 90 120	do do do	do do do
	WINCHES, AFT	D. 5	15.9 ✓	37	2.35	171	154	do	do.
	STEERING GEAR—								
	(a) MOTOR GENERATOR...	1	65 ✓	19	2.1	95	150	do	do.
	(b) MAIN MOTOR	1	65 ✓	19	2.1	90	12	do	do
	WORKSHOP MOTOR	✓							
	VENTILATING FANS	✓							

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.

Luigi Massimo Montecchi

Electrical Engineers.

Date 23-11-26

COMPASSES.

Distance between electric generators or motors and standard compass *wireless converter* 11 m.

Distance between electric generators or motors and steering compass *do* 8 m.

The nearest cables to the compasses are as follows:—

A cable carrying 5 Amperes 5 m. from standard compass 4 m. feet from steering compass.

A cable carrying 4.78 Amperes 6 m. from standard compass 5 m. 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 *no*

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.

W. J. J. J. J.

Builder's Signature.

Date 23-11-26.

Is this installation a duplicate of a previous case *yes*. If so, state name of vessel *India*

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

this vessel has been fitted on board in accordance with the requirements of the Rules. The generators and motors were tested in the shops, before being fitted on board, and on completion the whole installation was tested under full working conditions, and found satisfactory.

wireless fitted

DUAL CLASS

L.R. & R.I.

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

W. J. J. J. J.
8/12/26

Total Capacity of Generators 198. Kilowatts.

The amount of Fee ... *£4232+* When applied for, *Dec 4, 1926*

Travelling Expenses (if any) £ : : When received, *10/1/27*

W. Lockney
Surveyor to Lloyd's Register of Shipping.

Committee's Minute *FRI. 10 DEC 1926*

TUES. 18 JAN 1927.

Assigned

Elec. Light

FRI. 18 FEB 1927