

# REPORT ON ELECTRICAL EQUIPMENT

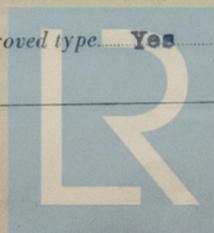
(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

MAY 1945

Received at London Office Y 1945

Date of writing Report 13th Apr. 1945 When handed in at Local Office 13th Apr. 1945 Port of Baltimore, Maryland  
 No. in Survey held at Baltimore, Maryland Date, First Survey Sept. 8/44 Last Survey January 17th 1945  
 Reg. Book. 79299 on the M. V. "LAVORO" (Number of Visits 10) Tons { Gross 7886  
 Net 4457  
 Built at Trieste By whom built Cantiere Riuniti Dell' Adriatico Yard No. 1212 When built 1938  
 Owners A. Lauro Port belonging to Naples  
 Electric Light Installation fitted by Cantiere Riuniti Dell' Adriatico Contract No. - When fitted 1938  
 Is the Vessel fitted for carrying Petroleum in bulk Yes

System of Distribution 2 - Wire  
 Pressure of supply for Lighting 110 volts, Heating - volts, Power 110 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 -, are they compound wound Yes  
 are they over compounded 5 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 No, 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 - Have machines over 100 kw. been inspected by the Surveyors during manufacture and testing -  
 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 Steam driven, starboard side forward, oil engine driven, starboard side aft is the ventilation engine room platform  
 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 bedplates and frames of the generating plant efficiently earthed - are the prime movers and their respective generators in metallic contact Yes Main Switch Boards, where placed Starboard side engine room platform aft.  
 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 - and -, 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 -, 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, 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 Yes 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  
**Fused Disconnect Switch**  
 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 Two ammeters Two voltmeters - synchronising device for paralleling purposes. For compound machines is the ammeter connected on the opposite pole to equaliser connection -  
 Earth Testing, state what means are provided at the main switchboard for indicating the state of the insulation of the system  
Earth lamps 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



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current protection devices been tested under working conditions **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 or XI of the Rules **Yes**

If the cables are insulated otherwise than as per Rule, are they of an approved type **-** Fall of Pressure, state maximum between bus bars and any point of the installation under maximum load **-** 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 **-**, or waterproof insulating tape **-** 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 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 **In steel casing along fore and aft gangway the wire clip and saddles spaced 8' apart, lead covered and armoured.**

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, are the cables and fittings in accordance with the special requirements **-**

Joints in Cables, state if any, and how made, insulated, and protected **-**

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 **-** state the material of which the bushes are made **-**

Earthing Connections, state what earthing connections are fitted and their respective sectional areas **Connections at each section board**

are their connections made as per Rule **Yes**

Alternative Lighting, are the groups of lights in the propelling machinery space arranged as per Rule **None** 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 **-**

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 **-**

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 fitted**, how are the cables led **-**

where are the controlling switches situated **-**

are all fittings suitably ventilated **-**, 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 **-**, are air heaters constructed and fitted as per Rule **-**

Searchlight Lamps, No. of **-**, whether fixed or portable **-**, are their fittings as per Rule **-**

Arc 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 **-**

have machines of over 100 BHP been inspected by the Surveyors during manufacture and testing **-** 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 **Yes** are all fuses of the filled cartridge type **Yes** are they of an approved type **-**

If portable lamps for use in dangerous spaces are supplied, are they of a self-contained, battery-fed type approved by the Home Office **-**

Spare Gear, if the vessel is for open sea service have spares been supplied as per Rule **Yes**

PARTICULARS OF GENERATING PLANT.

DESCRIPTION OF GENERATOR.	No. of	RATED AT				DRIVEN BY	WHERE DRIVEN BY AN INTERNAL COMBUSTION ENGINE.	
		Kilowatts.	Volts.	Amperes.	Revs. per Min.		Fuel Used.	Flash Point of Fuel.
MAIN ...	1	16	110	145	390	Steam Engine		
MAIN ...	1	16	110	145	390	Diesel	Diesel Oil	
EMERGENCY ...								
ROTARY TRANSFORMER								

GENERATOR, LIGHTING AND HEATING CONDUCTORS.

DESCRIPTION.	No. per Pole.	Total Nominal Area per Pole Sq. Ins.	COMPOSITION OF STRAND.		TOTAL MAXIMUM CURRENT. AMPERES.		Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED
			No.	Diameter.	Circuit.	Rule.			
MAIN GENERATOR ...	1	250000	37	.082	333	60	Varnished Cambric	Lead & Basket Weave Armor	
EQUALISER CONNECTIONS									
AUXILIARY GENERATOR									
EMERGENCY GENERATOR									
ROTARY TRANSFORMER (MOTOR GENERATOR)									
ENGINE ROOM ...	1	66400	7	.097	99	90	"	"	
BOILER ROOM									
AUXILIARY SWITCHBOARDS									
Workshop	1	66400	7	.097	99	150	"	"	
Refrigeration	1	168000	19	.094	185	700	"	"	
Engine Room Aux.	1	66400	7	.097	99	200	"	"	
ACCOMMODATION									
Aft Quarters	1	66400	7	.097	99	130	"	"	
Receptacle Panels	1	26300	7	.061	55	30	"	"	
Centrecastle Ltg.	1	66400	7	.097	99	650	"	"	
Forecastle Ltg.	1	66400	7	.097	99	900	"	"	
WIRELESS	1	66400	7	.097	99	650	"	"	
SEARCHLIGHT	1	66400	7	.097	99	900	"	"	
Running Lt. Panel	1	26300	7	.061	55	700	"	"	
SIDE LIGHTS									
COMPASS LIGHTS									
POOP LIGHTS									
CARGO LIGHTS									
ARC LAMPS									
HEATERS									

MOTOR CONDUCTORS.

DESCRIPTION.	No. of Motors.	CONDUCTORS.		COMPOSITION OF STRAND.		TOTAL MAXIMUM CURRENT. AMPERES.		Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED
		No. per Pole.	Total Nominal Area per Pole Sq. Ins.	No.	Diameter.	In Circuit.	Rule.			
BALLAST PUMP										
MAIN BILGE LINE PUMPS										
GENERAL SERVICE PUMP										
EMERGENCY BILGE PUMP										
SANITARY PUMP										
CIRC. SEA WATER PUMPS										
CIRC. FRESH WATER PUMPS										
AIR COMPRESSOR										
FRESH WATER PUMP	1	1	26300	7	.061	55	20	Varnished Cambric	Lead & Basket Weave Armor	
ENGINE TURNING GEAR										
ENGINE REVERSING GEAR										
LUBRICATING OIL PUMPS	1	1	16500	7	.048	41	30	Varnished Cambric	Lead & Basket Weave Armor	
OIL FUEL TRANSFER PUMP										
WINDLASS										
WINCHES, FORWARD										
Oil Separator	1	1	16500	7	.048	41	30	"	"	
WINCHES, AFT										
Oil Purifier	1	1	26300	7	.061	55	30	"	"	
STEERING GEAR—										
(a) MOTOR GENERATOR										
(b) MAIN MOTOR										
WORKSHOP MOTOR										
VENTILATING FANS										

All Conductors are of annealed copper conforming to British Standard Specification No. 7 (or International Electro-technical Commission Publication No. 28).

The Insulated Conductors are guaranteed to withstand the immersion and resistance tests specified in the Rules.

The foregoing is a correct description.

Electrical Engineers.

Date

COMPASSES.

Distance between electric generators or motors and standard compass

Distance between electric generators or motors and steering compass

The nearest cables to the compasses are as follows:—

A cable carrying - Ampères - feet from standard compass - feet from steering compass.

A cable carrying - Ampères - 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

Has the effect of switching on and off circuits, motors and other electro-magnetic apparatus within the vicinity of the compasses been noted

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.

Builder's Signature.

Date

Is this installation a duplicate of a previous case If so, state name of vessel

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

Entire aft quarters and machinery spaces re-wired. Existing fixtures used in machinery spaces. All cable under fore and aft gangway from aft quarters to amidship accommodation renewed. All cable is varnished cambric insulated leaded with basket weave armor. Cable of 4110 circ. Mils and smaller is rubber insulated. The generator examined under full working condition, the reverse current and overload devices operated and found in order. In my opinion the electrical installation of this vessel is in good and safe working condition and meets the special requirements of vessels carrying petroleum with flash point less than 150° F.

Total Capacity of Generators 32 Kilowatts.

The amount of Fee ... £ 120.00 When applied for, Apr. 13, 1945  
Travelling Expenses (if any) £ : : When received, 19

Surveyor to Lloyd's Register of Shipping.

Committee's Minute NEW YORK APR 18 1945 E. W. B.

Assigned Elec. light

1m-4-42—Transfer. Printed in U.S.A. (The Surveyors are requested not to write on or below the space for Committee's Minute)

