

# REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office 29 JUL 1925

Date of writing Report

19

When handed in at Local Office

27 JUL 1925

Port of

LIVERPOOL

Date, First Survey

16 July

Last Survey

26 July 1925

No. in Survey held at

Birkenhead

Reg. Book.

25053 on the

s/s "La Perla"

(Number of Visits.....)

Gross 3830

Net 2340

When built 1925

Built at

BIRKENHEAD

By whom built

MESSRS. CAMMELL, LARRO & CO. LTD

Yard No. 896

Owners

MESSRS THE UNITED FRUIT CO LTD

Port belonging to

Glasgow

Electric Light Installation fitted by

MESSRS. SUNDERLAND FORGE & ENG. CO LTD

Contract No.

When fitted 1925

System of Distribution POWER DOUBLE WIRED ✓ LIGHTING SINGLE WIRED ✓

Pressure of supply for Lighting 110. ✓ volts, Heating \_\_\_\_\_ volts, Power 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 overload 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 and clearly marked YES, are they so spaced or shielded that they cannot be accidentally earthed,

or short circuited YES Are the lubricating arrangements of the generators as per Rule YES

Position of Generators ENGINE ROOM. YES, are they clear of all inflammable material YES

is the ventilation in way of the generators satisfactory 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 axis of rotation fore and aft YES

Earthling, 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 SWITCHBOARD. FURT. AFT END OF ENG. ROOM.

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, incombustible 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 connected to one pole

insulated from the slab with mica or micanite and the slab similarly insulated from its framework YES, and is the

frame effectively earthed YES Are the following fittings as per Rule, viz.:— 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. D.P. LOAD REV. CURRENT

CIRC. BRK. & D.P. % SWTCH WITH S.P. % LINK FOR EACH GENERATOR ONE. PLE. TO ACT AS EQUILISER.

D.P. SWITCHES & FUSES FOR POWER S.P. SWITCHES & FUSES FOR LIGHTING.

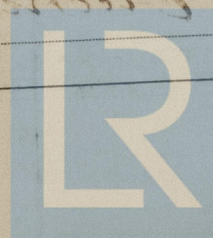
Instruments on main switchboard SIX ammeters FOUR voltmeters \_\_\_\_\_ synchronising device for paralleling purposes.

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

LIGHTING. CIRC'S SINGLE WIRED OHMMETER FOR TESTING POWER CIRC'S

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

Section and Distribution Boards, is the construction, protection, insulation, material, and position of these as per rule YES



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**Insulation of Cables**, state type of cables, single or twin SNG/S are the cables insulated and protected as per Tables III or IV of the Rules Yes

**Fall of Pressure**, state maximum between bus bars and any point of the installation under maximum load 4.5 Volts

**Cable Sockets and other connections**, are the ends of all cables having a sectional area of 0.007 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 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 GALVANIZED IRON CLIPS SUPPORTING CABLES

CABLES LEAD COVERED ARMOURD & BRAIDED WHERE EXPOSED AND LEAD COVERED & BRAIDED IN ACCORDANCE

If cables are run in wood casings, are the casings and caps secured by screws Yes, are the cap screws of brass Yes, are the cables run in separate grooves Yes. If armoured and lead covered cables are secured by metal clips, are the clips spaced as per Table VI 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 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 Positions**, 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 NEGATIVE BUS BAR (1/0 Volts)  
EARTHED TO SHIP'S FRAME WITH COPPER TAPE 2 1/2" x 1/8"

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

ROOF DECK SWITCHES & D.P. FUSES AND BATTERY SUPPLY CHARGED FROM 220 Volts SUPPLY

**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, are separate screens provided for the use of oil and electric side lights Yes

are separate oil lanterns provided for the mast head lights and side lights Yes

**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 IN WATERTIGHT

FITTINGS WITH HEAVY GLASS BOWLS PROTECTED BY M.C.I. GUARDS

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

ON WOOD GROUNDS & SUPPORTED BY GALVANIZED IRON CLIPS

where are the controlling switches situated ON MAIN SWITCH

**Searchlight Lamps**, No. of NONE, whether fixed or portable Yes, are their fittings as per Rule Yes

**Arc Lamps**, other than searchlight lamps, No. of NONE, are their live parts insulated from the frame or case Yes, are their fittings as per Rule Yes

**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 axis 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 Yes, if not of this type, state distance of the combustible material horizontally or vertically above the motors Yes

**Control Gear and Resistances**, are the generator field and motor speed regulators, starters and controllers constructed 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 Yes

If portable lamps for use in dangerous spaces are supplied, are they of a type approved by the Home Office Yes

# 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 ...	2	200	220	800	575	COMPOUND STEAM ENGINE		
AUXILIARY ...	1	55		250	450			
EMERGENCY ...								
ROTARY TRANSFORMER	2	12	110	140	600	220 Volts Motor		

## 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.				
	MAIN GENERATOR...	2	1.25	27	.12	25	70	V.I.R.	LC&B
	AUXILIARY GENERATOR								
	EMERGENCY GENERATOR								
	ROTARY TRANSFORMER...	2	1.00	10	.083	110	150	V.I.R.	LC&B
	AUXILIARY SWITCHBOARDS	2	1.00	10	.083	110	150	V.I.R.	LC&B
	ENGINE ROOM	1	.007	7	.036	10.1	88	V.I.R.	LC&B
	BOILER ROOM	1	.007	7	.036	3.8	88	V.I.R.	LC&B
	NAVIG. & OFFICERS	2	.082	7	.064	18.0	60	V.I.R.	LC&B
	ACCY. ENG.	2	.007	7	.036	4.2	90	V.I.R.	LC&B
	ENG. RM. ENG.	2	.007	7	.036	4.2	90	V.I.R.	LC&B
	NAVIG. ENG.	2	.082	7	.064	18.0	60	V.I.R.	LC&B
	ACCY. PORT.	1	.042	7	.064	18.0	60	V.I.R.	LC&B
	STB	1	.064	7	.064	20.5	88	V.I.R.	LC&B
	FOC/LS	1	.007	7	.036	6.4	140	V.I.R.	LC&B
	SHORE CANNON	2	.247	37	.083		85	V.I.R.	
	CARGO SPACE. F.C. UTD	2	.007	7	.036	5.5	70	V.I.R.	LC&B
	MTD	2	.007	7	.036	7.35	70	V.I.R.	LC&B
	LTD	2	.007	7	.036	7.35	70	V.I.R.	LC&B
	AST UTD	2	.007	7	.036	5.7	70	V.I.R.	LC&B
	MTD	2	.007	7	.036	7.35	70	V.I.R.	LC&B
	LTD	2	.007	7	.036	7.35	70	V.I.R.	LC&B
	WIRELESS BATTERY ENG.	2	.04	19	.082	10.0	85	V.I.R.	LC&B
	SEARCHLIGHT								
	MASTHEAD LIGHT	2	.002	3	.029	.9	300	V.I.R.	LC&B
	SIDE LIGHTS	2	.002	3	.029	.9	106	V.I.R.	LC&B
	COMPASS LIGHTS	2	.002	3	.029	.9	30	V.I.R.	LC&B
	POOP LIGHTS	1	.022	7	.064	14	140	V.I.R.	LC&B
	CARGO LIGHTS	1	.007	7	.036	2.9	150	V.I.R.	LC&B
	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.				
	BILGE AND BALLAST PUMP	1	.022	7	.064	41	85	V.I.R.	LC&B
	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	.022	7	.064	41	180	V.I.R.	LC&B
	ENGINE TURNING GEAR								
	ENGINE REVERSING GEAR								
	LUBRICATING OIL PUMPS								
	OIL FUEL TRANSFER PUMP								
	WINDLASS	1	.106	37	.083	107	70	VAR. COM.	LC&B
	WINCHES, FORWARD	4	2.06	19	.064	135	20	V.I.R.	LC&B
	WINCHES, AFT	4	2.06	19	.064	135	20	V.I.R.	LC&B
	STEERING GEAR	1	.06	19	.064	50	190	V.I.R.	LC&B
	WORKSHOP MOTOR								
	VENTILATING FANS	1	.117	37	.064	95	180	V.I.R.	LC&B
	MOTOR FOR M/G SET	2	.06	19	.064	72	70	V.I.R.	LC&B
	AUX. REFRIG. MOTOR	1	.06	19	.064	44	136	V.I.R.	LC&B
	SMALL. BEINS PUMP	1	.022	7	.064	12.5	136	V.I.R.	LC&B
	REFRIG. CIRC. PUMP	1	.06	19	.064	.77	136	V.I.R.	LC&B
	BEINS PUMPS	2	.06	19	.064	.69	136	V.I.R.	LC&B
	MAIN REFRIG. M/C	2	1.25	127	.112	416	150	V.I.R.	LC&B
	CODER. FAN. MOTORS	7	.06	19	.064	70	60	V.I.R.	LC&B
	AUX. REFRIG. CIRC. PUMP	1	.007	7	.036	6	160	V.I.R.	LC&B



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.

P. PRO THE SUNDERLAND FORGE & ENGINEERING CO. LTD.

Electrical Engineers.

Date 22 July 1925

#### COMPASSES.

Distance between electric generators or motors and standard compass 120'-0" AND 35'-0" FROM NEAREST MOTOR

Distance between electric generators or motors and steering compass 114'-0" " 29'-0"

The nearest cables to the compasses are as follows:—

A cable carrying 12.05 Ampères 11 feet from standard compass 11 feet from steering compass.

A cable carrying 2 Ampères 3 feet from standard compass 3 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 No If so, state name of vessel

General Remarks (State quality of workmanship, opinions as to class, &c. This Electric Installation has

been fitted under special survey and is in accordance with the Rules. The materials and workmanship are of good quality. When tried under full working conditions, the installation was found satisfactory in every respect. In my opinion, this vessel is eligible to have the notation "Electric Light"

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

CMS 29/7/25

Total Capacity of Generators 655 Kilowatts

The amount of Fee £ 47: 17/6

When applied for, 27 JUL 1925

B. G. Oxford

Surveyor to Lloyd's Register of Shipping.

Travelling Expenses (if any) £

When received, 28 JUL 1925

Committee's Minute

Assigned

Electric Light

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Im. 3.22.—Transfer.  
(The Surveyors are requested not to write on or below the space for Committee's Minute.)



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