

# REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Date of writing Report

19

When handed in at Local Office

24 JAN 1924

Port of

LIVERPOOL.

No. in Survey held at  
Reg. Book.

BIRKENHEAD.

Date, First Survey

20th July/23

Last Survey

23rd Jan 1924

24987 on the

"LA PLAYA" (DIESEL ELECTRIC SHIP)

(Number of Visits)

Tons

Gross

Net

Built at BIRKENHEAD.

By whom built

MESSRS CAMELL LAIRD &amp; CO

Yard No. 894.

When built 1924

Owners UNIFRUIT CO. SS. CO. LD. (CLARK &amp; SERVICE MGRS.)

Port belonging to

GLASGOW.

Electric Light Installation fitted by SUNDERLAND FORGE &amp; ENG. CO. LD.

Contract No.

When fitted

## System of Distribution

Single wired earth return for E.L., Double wired for Power.

Pressure of supply for Lighting

110

volts, Heating

Nil.

volts, Power

220 (aux power only) volts.

Direct or Alternating Current, Lighting

Direct Current

Power

Direct Current.

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

110 volt (compound)

are they over compounded 5 per cent.

No

if not compound wound state distance between each generator

11 feet.

Where more than one generator is fitted are they arranged to run in parallel

No.

series with each shunt field

Yes.

Are all terminals accessible and clearly marked

Yes.

or short circuited

Yes.

Are the lubricating arrangements of the generators as per Rule

Yes.

## Position of Generators

In Engine Room.

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 axis of rotation fore and aft

Yes.

Earthing, 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 flat aft end of Engine 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.

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.

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.

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

Switches Double Pole Circuit Breakers for each generator (110+220 volt). Single Pole switches & Double Pole fuses for Power & Single Pole switches & Single Pole fuses for lighting.

Instruments on main switchboard

9.

ammeters

7

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

E.L. circuits single wired, Ohmmeter for testing power circuits.

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 Single 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 no paper insulated cables 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 Galv. iron clips supporting cables. Wire armoured lead covered & braided cables used in Mach. spaces. All other cables lead covered & braided

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 no joints

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 Busbar (110volts) earthed to ship's frame with copper tape 2" x .15

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 Boat Deck. Switches and D.P. fuses and Battery supply changes from 220 volt 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 yes in watertight fittings with heavy glass bowl 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 and supported by galv. iron clips

where are the controlling switches situated on Main Switchboard

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

Arc Lamps, other than searchlight lamps, No. of Nil, 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. | Amperes. | Revs. per Min. |                               | Fuel Used.                                     | Flash Point of Fuel. |  |
| MAIN                             | 4 power    | 200        | 220    | 910      | 260            | Diesel Oil Engine             |  |                      |  |
| AUXILIARY                        | 1 lighting | 25         | 110    | 228      | 650            | Paraffin engine (Petrol Star) |  |                      |  |
| EMERGENCY                        |            |            |        |          |                |                               |  |                      |  |
| ROTARY TRANSFORMER               | 1 lighting | 12         | 110    | 109      | 600            | Motor 220 volt                |  |                      |  |

| 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         | 4                  | 1.24 sq. ins.                              | 127                    | 0.103     | 910                             | 60   | V.I.R.         | Lead covered & braided & compounded.  |
|                                  | AUXILIARY GENERATOR    | 2                  | 0.3  | 37                     | 0.103     | 228                             | 40   | V.I.R.         | "                                     |
|                                  | EMERGENCY GENERATOR    | 1                  | 0.1  | 19                     | 0.083     | 109                             | 46   | V.I.R.         | Lead covered & braided & compounded.  |
|                                  | ROTARY TRANSFORMER     | 1                  | 0.1  | 19                     | 0.083     | 109                             | 46   | V.I.R.         | Lead covered & braided & compounded.  |
|                                  | AUXILIARY SWITCHBOARDS | Nil                |  |                        |           |                                 |  |                |                                       |
|                                  | ENGINE ROOM            | 1                  | 0.022                                      | 7                      | 0.064     | 31                              | 25   | V.I.R.         | Lead covered & braided & compounded.  |
|                                  | MOTOR ROOM             | 1                  | 0.007                                      | 7                      | 0.036     | 5.3                             | 80   | "              | "                                     |
|                                  | NAV. & OFFICERS        | 2                  | 0.022                                      | 7                      | 0.064     | 18.5                            | 160  | "              | Lead covered & braided.               |
|                                  | ACCOM. PORT            | 1                  | 0.022                                      | 7                      | 0.064     | 18.05                           | 43   | "              | "                                     |
|                                  | " STARBOARD            | 1                  | 0.022                                      | 7                      | 0.064     | 20.5                            | 28   | "              | "                                     |
|                                  | " FORWARD              | 1                  | 0.007                                      | 7                      | 0.036     | 6.4                             | 140  | "              | Lead covered & braided.               |
|                                  | CARGO SPACE FORWARD    | 2                  | 0.007                                      | 7                      | 0.036     | 5.3                             | 78   | "              | "                                     |
|                                  | " " M.T.O.             | 2                  | 0.007                                      | 7                      | 0.036     | 7.35                            | 70   | "              | "                                     |
|                                  | " " L.T.O.             | 2                  | 0.007                                      | 7                      | 0.036     | 7.35                            | 78   | "              | "                                     |
|                                  | CARGO SPACE AFT        | 2                  | 0.007                                      | 7                      | 0.036     | 5.7                             | 40   | "              | "                                     |
|                                  | " " M.T.O.             | 2                  | 0.007                                      | 7                      | 0.036     | 6.4                             | 34   | "              | "                                     |
|                                  | " " L.T.O.             | 2                  | 0.007                                      | 7                      | 0.036     | 11                              | 40   | "              | "                                     |
|                                  | WIRELESS INSTALLATION  | 2                  | 0.06                                       | 19                     | 0.064     | 40                              | 35   | V.I.R.         | Lead covered & braided.               |
|                                  | BATTERY CHARGING       | 2                  | 0.06                                       | 19                     | 0.064     | 70                              | 35   | "              | "                                     |
|                                  | SEARCHLIGHT            | Nil                |  |                        |           |                                 |  |                |                                       |
|                                  | MASTHEAD LIGHT         | 2                  | 0.002                                      | 7                      | 0.02      | 1.16                            | 300  | V.I.R.         | Lead covered wire armoured & braided. |
|                                  | SIDE LIGHTS            | 2                  | 0.002                                      | 3                      | 0.029     | 1.16                            | 106  | "              | Lead covered & braided.               |
|                                  | COMPASS LIGHTS         | 2                  | 0.002                                      | 3                      | 0.029     | 0.3                             | 30   | "              | "                                     |
|                                  | POOP LIGHTS            | 1                  | 0.022                                      | 7                      | 0.064     | 14.0                            | 140  | "              | Lead covered wire armoured & braided. |
|                                  | CARGO LIGHTS           | 1                  | 0.007                                      | 7                      | 0.036     | 9.9                             | 150  | "              | "                                     |
|                                  | ARC LAMPS              | Nil                |  |                        |           |                                 |  |                |                                       |
|                                  | HEATERS                | Nil                |  |                        |           |                                 |  |                |                                       |

| 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. |                                 |  |                |                                       |
|                   | BALLAST PUMP            | 1              | 0.06                                       | 19                     | 0.064     | 33                              | 36   | V.I.R.         | Lead covered wire armoured & braided. |
|                   | MAIN BILGE LINE PUMPS   |                |  |                        |           |                                 |  |                |                                       |
|                   | GENERAL SERVICE PUMP    |                |  |                        |           |                                 |  |                |                                       |
|                   | EMERGENCY BILGE PUMP    |                |  |                        |           |                                 |  |                |                                       |
|                   | SANITARY PUMP           | 1              | 0.06                                       | 19                     | 0.064     | 113                             | 90   | V.I.R.         | Lead covered wire armoured & braided. |
|                   | CIRC. SEA WATER PUMPS   | 2              | 0.06                                       | 19                     | 0.064     | 76 each motor                   | 85 each motor                                | "              | "                                     |
|                   | CIRC. FRESH WATER PUMPS |                |  |                        |           |                                 |  |                |                                       |
|                   | AIR COMPRESSOR          | 1              | 0.06                                       | 19                     | 0.064     | 113                             | 80   | V.I.R.         | "                                     |
|                   | FRESH WATER PUMP        | 1              | 0.06                                       | 19                     | 0.064     | 38                              | 44   | "              | "                                     |
|                   | ENGINE TURNING GEAR     |                |  |                        |           |                                 |  |                |                                       |
|                   | ENGINE REVERSING GEAR   |                |  |                        |           |                                 |  |                |                                       |
|                   | LUBRICATING OIL PUMPS   | 1              | 0.06                                       | 19                     | 0.064     | 30                              | 168  | V.I.R.         | Lead covered wire armoured & braided. |
|                   | OIL FUEL TRANSFER PUMP  | 1              | 0.06                                       | 19                     | 0.064     | 60                              | 50   | "              | "                                     |
|                   | WINDLASS                | 1              | 0.2  | 37                     | 0.083     | 197                             | 70   | V.I.R.         | "                                     |
|                   | WINCHES, FORWARD        | 4              | 0.06                                       | 19                     | 0.064     | 135 each motor                  | 20   | V.I.R.         | "                                     |
|                   | WINCHES, AFT            | 4              | 0.06                                       | 19                     | 0.064     | 135 each motor                  | 20   | "              | "                                     |
|                   | STEERING GEAR           | 1              | 0.06                                       | 19                     | 0.064     | 57                              | 190  | "              | "                                     |
|                   | WORKSHOP MOTOR          |                |  |                        |           |                                 |  |                |                                       |
|                   | VENTILATING FANS        | 2              | 0.06                                       | 19                     | 0.064     | 68                              | 120  | V.I.R.         | Lead covered wire armoured & braided. |
|                   | MOTOR OF M.G. SET       | 1              | 0.06                                       | 19                     | 0.064     | 72                              | 62   | "              | Lead covered wire armoured & braided. |
|                   | AUX. REFRIG. MOTOR      | 1              | 0.06                                       | 19                     | 0.064     | 40                              | 20   | "              | Lead covered wire armoured & braided. |
|                   | SMALL BRINE PUMP        | 1              | 0.022                                      | 7                      | 0.064     | 10                              | 54   | "              | "                                     |
|                   | PRESSURE BLOWER MOTOR   | 1              | 0.022                                      | 7                      | 0.064     | 20                              | 96   | "              | "                                     |
|                   | REFRIG. CIRC. PUMP      | 1              | 0.06                                       | 19                     | 0.064     | 76                              | 34   | "              | "                                     |
|                   | BRINE PUMPS             | 2              | 0.06                                       | 19                     | 0.064     | 67                              | 80 each motor                                | "              | "                                     |
|                   | MAIN REFRIG. MACHINES   | 2              | 0.75                                       | 91                     | 0.103     | 416                             | 75   | "              | Lead covered wire armoured & braided. |
|                   | COOLER FAN MOTORS       | 7              | 0.06                                       | 19                     | 0.064     | 68                              | 58   | "              | "                                     |
|                   | SMALL PUMP (HEAT SPACE) | 1              | 0.007                                      | 7                      | 0.036     | 6                               | 160  | "              | "                                     |
|                   | ENGINE ROOM VENT. FAN   | 1              | 0.06                                       | 19                     | 0.064     | 36                              |  | "              | "                                     |
|                   | OIL SEPARATOR MOTOR     | 1              | 0.007                                      | 7                      | 0.036     | 4.75                            | 120  | "              | "                                     |



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.

THE SUNDERLAND FORGE & ENGINEERING CO. LTD.

Electrical Engineers.

Date 24.1.24

COMPASSES.

Distance between electric generators or motors and standard compass 68 FT

Distance between electric generators or motors and steering compass 60 FT.

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 YES.

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

The maximum deviation due to electric currents was found to be 0 degrees on ALL course in the case of the standard compass, and 2½ degrees on A S.E. course in the case of the steering compass.

CAMMELL LAIRD AND COMPANY LIMITED.

J. W. Laird Builder's Signature.

Date 24.1.24.

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 light installation has now been fitted on board and is in accordance with the Rules. The materials and workmanship are of good quality and when tried under full working conditions was found satisfactory in every respect. The vessel is eligible in our opinion to have notation "ELECTRIC LIGHT"

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

JWJ  
29/1/24

Total Capacity of Generators 825 Kilowatts

The amount of Fee £ 34.7.0  
When applied for, 24 JAN 1924

Travelling Expenses (if any) £ 16.6.0  
Installation Fee  
When received, 31/1/24

LIVERPOOL

Committee's Minute

Assigned

Electric Light

JER

1m.9.22.—Transfer.  
(The Surveyors are requested not to write on or below the space for Committee's Minute.)



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