

Rpt. 13.

No. 13026

**REPORT ON ELECTRIC FITTINGS.**

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

-7 SEP 1927

Date of writing Report

5. 9. 27

When handed in at Local Office

5. 9. 27

Port of

MIDDLEGROUCH

No. in Survey held at

Haverton Hill on Tues

Date, First Survey

15. 4. 24

Last Survey

12. 8. 1924

Reg. Book. Supplement

(Number of Visits.....10.....)

42155 on the

S.S. Otterhound

Tons { Gross  
Net

Built at

Haverton Hill / Tues

By whom built

Furness S/B Co Ltd

Yard No. 121

When built

1927

Owners

Coastal Tankers Limited

Port belonging to

London

Electric Light Installation fitted by

Furness Shipbuilding Co Ltd

Contract No. 121

When fitted

1927

**System of Distribution**

Double wire Insulated

**Pressure of supply for Lighting**

110

volts, Heating

volts, Power

volts.

**Direct or Alternating Current, Lighting**

Direct

Power

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.

Level

, if not compound wound state distance between each generator

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

-

, 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

Are the lubricating arrangements of the generators as per Rule

yes

**Position of Generators**

Starboard side of 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 axes 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

Starboard side 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

, 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

, 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

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

switches fuses for Generator each outgoing circuit

**Instruments on main switchboard**

1

ammeters

1

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

2-10 watt lamps

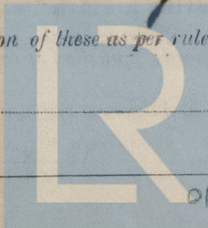
in series across bus-bars middle point earthed

**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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**Cables:** Single, twin, concentric, or multicore are the cables insulated and protected as per Tables IV or V of the Rules. *IV*

**Fall of Pressure,** state maximum between bus bars and any point of the installation under maximum load. *3.8*

**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

**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

**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. *Main feeder cables are run in iron piping, cables which are exposed are lead covered armoured cables*

**Support and Protection of Cables,** state how the cables are supported and protected. *Lead covered armoured cables are supported by means of galv iron clips. Lead covered cables are supported by brass clips*

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 -

**Joints in Cables,** state if any, and how made, insulated, and protected. *Porcelain extensions in cast brass left cases*

**Watertight Glands and Deck Tubes,** are all cables passing through decks and watertight bulkheads provided with deck tubes or watertight glands

**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*

**Earthing Connections,** state what earthing connections are fitted and their respective sectional areas. *Generator . 0400 Switchboard . 0045*

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

**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 storerooms 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

*Special Pump Room fittings (Gaslight)* *In iron pipes* *Outside pump room*

where are the controlling switches situated

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

**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 - , are the coils self-contained and readily removable for replacement -

are the brushes, brush holders, terminals and lubricating arrangements as per Rule - , are the motors placed in well-ventilated compartments in which inflammable gases cannot accumulate and clear of all inflammable material

are they protected from mechanical injury and damage from water, steam or oil - are their axes of rotation fore and aft -

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 -

**Control Gear and Resistances,** are the generator field and motor speed regulators, starters and controllers constructed and fitted as per Rule -

**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 ...                  | 1      | 5          | 110    | 46       | 430            | Sunderland Forge Co |  |                      |
| AUXILIARY ...             |        |            |        |          |                | Open type engine    |  |                      |
| EMERGENCY ...             |        |            |        |          |                |                     |  |                      |
| 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. |                                 |  |                |                       |
| ENG. A 953<br>DYN. A 343 | MAIN GENERATOR...          | 2                  | .0225                                      | 7                      | .064      | 42.1                            | 20'  | V. I. R.       | Lead covered          |
|                          | EQUALISER CONNECTIONS ...  |                    |  |                        |           |                                 |  |                | Armoured              |
|                          | AUXILIARY GENERATOR ...    |                    |  |                        |           |                                 |  |                | Braided               |
|                          | EMERGENCY GENERATOR ...    |                    |  |                        |           |                                 |  |                |                       |
|                          | ROTARY TRANSFORMER...      |                    |  |                        |           |                                 |  |                |                       |
|                          | AUXILIARY SWITCHBOARDS ... |                    |  |                        |           |                                 |  |                |                       |
|                          | ENGINE ROOM } ...          | 2                  | .0070                                      | 7                      | .036      | 10.5                            | 18'  | V. I. R.       | "                     |
|                          | BOILER ROOM } ...          |                    |  |                        |           |                                 |  |                |                       |
|                          | ACCOMMODATION MIDSHIP ...  | 2                  | .0100                                      | 7                      | .044      | 10.7                            | 240'   | V. I. R.       | Lead covered          |
|                          | Aft Accommodation ...      | 2                  | .0070                                      | 7                      | .036      | 12.3                            | 90'  | V. I. R.       | "                     |
|                          | Navigation Mast ...        | 2                  | .0070                                      | 7                      | .036      | 8.6                             | 250'   | V. I. R.       | Braided               |
|                          | WIRELESS ...               |                    |  |                        |           |                                 |  |                |                       |
|                          | SEARCHLIGHT ...            |                    |  |                        |           |                                 |  |                |                       |
|                          | MASTHEAD LIGHT...          | 2                  | .0020                                      | 3                      | .029      |                                 | 280'   | V. I. R.       | Lead covered Armoured |
|                          | SIDE LIGHTS...             | 2                  | .0020                                      | 3                      | .029      |                                 | 60'  | V. I. R.       | Lead covered Braided  |
|                          | COMPASS LIGHTS...          | 2                  | .0020                                      | 3                      | .029      |                                 | 40'  | V. I. R.       | "                     |
|                          | POOP LIGHTS...             | 2                  | .0020                                      | 3                      | .029      |                                 | 280'   | V. I. R.       | Lead covered Armoured |
|                          | CARGO LIGHTS...            | 2                  | .0020                                      | 3                      | .029      |                                 | 200'   | V. I. R.       | "                     |
|                          | 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. |                                 |  |                |                |
|          | 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 ...        |                |  |                        |           |                                 |  |                |                |
|          | ENGINE TURNING GEAR ...     |                |  |                        |           |                                 |  |                |                |
|          | ENGINE REVERSING GEAR ...   |                |  |                        |           |                                 |  |                |                |
|          | LUBRICATING OIL PUMPS ...   |                |  |                        |           |                                 |  |                |                |
|          | OIL FUEL TRANSFER PUMP ...  |                |  |                        |           |                                 |  |                |                |
|          | WINDLASS ...                |                |  |                        |           |                                 |  |                |                |
|          | WINCHES, FORWARD ...        |                |  |                        |           |                                 |  |                |                |
|          | WINCHES, AFT ...            |                |  |                        |           |                                 |  |                |                |
|          | 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.

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

The foregoing is a correct description.

P. S. Glover.

FOR FURNESS SHIPBUILDING CO. LIMITED

Electrical Engineers

Date 17th August 1927

#### 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 9 Ampères 3 feet from standard compass 3.6 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 nil degrees on all course in the case of the standard

compass, and nil degrees on all course in the case of the steering compass.

FOR FURNESS SHIPBUILDING CO. LIMITED,

Jas. M. Robertson

Builder's Signature.

Date 17th Aug 1927

Secretary.

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.)

The materials and workmanship are good.  
The installation of electric lighting to this vessel has been carried out under special survey and in accordance with the Rules. The plant has been tested with satisfactory results and is, in my opinion, suitable for a classed vessel.

Elec. light.

Total Capacity of Generators 5 Kilowatts.

The amount of Fee ... £ 5.00

Travelling Expenses (if any) £

When applied for,

When received,

Committee's Minute

Assigned

Elec Light



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