

Rpt. 13.

No. 42376

REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Date of writing Report 18.12.1922 When handed in at Local Office 18.12.1922 Port of Dundee

No. in Survey held at Dundee Date, First Survey 19th May 1922 Last Survey 9th December 1922.
Reg. Book. on the S.S. "British Commander" (Number of Visits 23)

Built at Dundee By whom built Caledon S.B. & L. Co. Yard No. 282 When built 1922

Owners The British Tanker Co. Ltd. Port belonging to London.

Electric Light Installation fitted by The Sunderland Forge Co Contract No. 282. When fitted 1922.

System of Distribution Power 3 phase Alternating, Lighting 110 volts D.C. two wire

Pressure of supply for Lighting 110 volts, Heating volts, Power 220 volts.

Direct or Alternating Current, Lighting Direct Power Alternating

If alternating current system, state frequency of periods per second 50.

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 A.C.

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 Turbo Alternators, Port & Starboard on generating platform, Steam motor generators below.

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 On generating platform for power & below for lighting

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. Circuit breakers with

overload trip for each generator & for each circuit & 3 way quick break knife switches. Lighting switchboard & D.P. main switch & D.P. changeover circuit switches.

Instruments on main switchboard 4 ammeters 2 voltmeters 1 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 Earth lamps.

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.



© 2019

Lloyd's Register Foundation

W387-0066 1/2

Single, 3 core

Insulation of Cables, state type of cables, single or twin, *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 *3.7 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 *yes*

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 *Lighting cables run in troughing under fore & aft gangway, troughing filled with bitumen*

Support and Protection of Cables, state how the cables are supported and protected *cable clipped to Bulkhead & trays with galvanised iron 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 VI *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 *none made*

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 *fibre*

Earthing Connections, state what earthing connections are fitted and their respective sectional areas *none*

are their connections made as per Rule

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*, 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 *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 *yes in pump room, protected by stout glass bowl in galvanised steel pipe wholly outside pump room.*

where are the controlling switches situated *underneath saloon in deck space.*

Searchlight Lamps, No. of *1*, whether fixed or portable *1*, are their fittings as per Rule *yes*

Arc Lamps, other than searchlight lamps, No. of *1*, 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 (except steering gear motor)*

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 as per Rule *yes*

Lightning Conductors, where lightning conductors are required, are these fitted as per Rule *On fore & aft masts*

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 | 120 K.V.A. | 220 | 365 | 1000 | Italian Turbine through Gearing. | | | |
| AUXILIARY ... | 1 | 10 K.W. | 110 | 91 | 1440 | A.C. Induction Motor | | | |
| EMERGENCY ... | 1 | 10 K.W. | 110 | 91 | 340 | Single cylinder steam engine | | | |
| 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. | | | | |
| | MAIN GENERATOR. <i>BURRAC</i> | 3 | .3024 | 37 | .103 | 365 | 30 | paper | L.C.A. & Braided |
| LIGHTING | AUXILIARY GENERATOR | 2 | .1009 | 19 | .083 | 91 | 27 | rubber | " |
| LIGHTING | STEAM GENERATOR | 2 | .1009 | 19 | .083 | 91 | 24 | " | " |
| | ROTARY TRANSFORMER... | | | | | | | | |
| | AUXILIARY SWITCHBOARDS... | | | | | | | | |
| | ENGINE ROOM ... | 2 | .01 | 7 | .044 | 13 | 50 | " | " |
| | BOILER ROOM ... | 2 | .007 | 7 | .036 | 7 | 156 | " | " |
| | <i>Saloon & hangar</i> | 2 | .06 | 19 | .064 | 58 | 58 | " | " |
| | <i>Aft Accommodation</i> | 2 | .01 | 7 | .044 | 21 | 80 | " | " |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |

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 1st December 1922

COMPASSES.

Distance between electric generators or motors and standard compass

260 feet

Distance between electric generators or motors and steering compass

47 "

The nearest cables to the compasses are as follows:—

A cable carrying 28 Amperes on the ~~main~~ standard compass 7 feet from steering compass.

A cable carrying 28 Amperes 7 feet from standard compass on the ~~main~~ steering compass.

A cable carrying 6.6 Amperes 10 feet from standard compass 14 feet from steering compass.

Have the compasses been adjusted with and without the electric installation at work at full power With 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 Yes

The maximum deviation due to electric currents was found to be Nil degrees on any course in the case of the standard compass, and Nil degrees on any course in the case of the steering compass.

THE CALSON SHIPBUILDING & ENGINEERING CO. LD

Builder's Signature.

Date

Is this installation a duplicate of a previous case No.

If so, state name of vessel S.S. British Merchant.

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

This installation has been fitted on board under special survey. Tested under full working conditions found satisfactory in every way.
The workmanship, in my opinion is satisfactory

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

Elec. Light

AHB

27/12/22

Total Capacity of Generators 202 Kilowatts

The amount of Fee ...

£ 36 : 11

When applied for,

Gundee

12/22

When received,

See debit

book.

1/2 fee due Gls.

2 " " Sundee.

Travelling Expenses (if any) £ 2 : 2

due Gls.

J. Shankin & J. Sells
Surveyor to Lloyd's Register of Shipping.

Committee's Minute

GLASGOW 19 DEC 1922

Assigned

Elec. Light

YMH



© 2019

Lloyd's Register
Foundation