

REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office SA1 OCT 21 1922

Date of writing Report 10/10/22 When handed in at Local Office 20 OCT 1922 Port of Sunderland.

No. in Survey held at Sunderland Date, First Survey 7/7/22. Last Survey Sep 14 1922
Reg. Book 55249 on the "British Advertiser" (Number of Visits 2)

Tons { Gross 7086
Net 4224

Built at Sunderland By whom built J. Lunn & Sons Ltd Yard No. 682 When built 1922

Owners British Tankers Co Ltd. Port belonging to London

Electric Light Installation fitted by Sunderland Forge & Eng Co Ltd Contract No. 682 When fitted 1922

System of Distribution Double 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 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 no ✓, 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 on dynamos flat, motor gen & Steam gen on flat 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 -
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 Power panel & distribution panel aft end of engine room, Lighting Switchboards on aft bulkhead flat below. 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 - 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 ✓

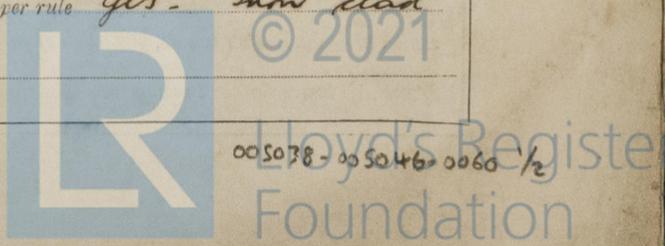
Main Switchgear, description of switchgear for each generator and each outgoing circuit, and arrangement of equalizer switches Three pole circuit breakers with overload trip for each generator. For each circuit a 2 pole switch & fuses on each outgoing circuit. Lighting circuits have double pole switch & fuses on main & outgoing circuits ✓

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 coupled to earth through switches & fuses ✓

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. Iron clad boxes fitted with Red type fuses. ✓



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 3.725 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 cables clipped to bulkheads & trays with galvanized 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 —, 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 none fitted

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 no, 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, how are the cables led in galvanized steel pipe wholly outside the pump room, where are the controlling switches situated in space under saloons

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 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 —, if not of this type, state distance of the combustible material horizontally or vertically above the motors yes and 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, 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

| 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 KVA | 220 | 315 | 1000 | Kalting Turbine through gearing | | |
| Auxiliary | 1 | 10 KVA | 110 | 91 | 1440 | A.C. Induction motor | | |
| Emergency | 1 | 10 KVA | 110 | 91 | 3600 | Single cylinder steam engine | | |
| ROTARY TRANSFORMER | | | | | | | | |

| Ref. No. | DESCRIPTION | No. of Conductors | Effective Area of each Conductor Sq. Ins. | COMPOSITION OF STRAND | | Total Maximum Current Ampères | Approximate Length (Lead and Return) Feet | Insulated with | HOW PROTECTED |
|----------|------------------------|-------------------|-------------------------------------------|-----------------------|----------|-------------------------------|-------------------------------------------|----------------|----------------|
| | | | | No. | Diameter | | | | |
| | MAIN GENERATOR | 3 | .3024 | 37 | .103 | 414 | 30 | paper | L.C.A. Braided |
| | AUXILIARY GENERATOR | 2 | .1009 | 19 | .083 | 91 | 30 | rubber | L.C.A. Braided |
| | EMERGENCY GENERATOR | | | | | | | | |
| | ROTARY TRANSFORMER | 2 | .1009 | 19 | .083 | 91 | 30 | rubber | L.C.A. Braided |
| | AUXILIARY SWITCHBOARDS | | | | | | | | |
| | ENGINE ROOM | 2 | .0126 | 4 | .024 | 16 | 90 | do | do |
| | BOILER ROOM | 2 | .0101 | 4 | .036 | 8 | 150 | do | do |
| | Salon & hangar | 2 | .06 | 19 | .064 | 65 | 510 | do | do |
| | off | 2 | .01046 | 4 | .024 | 24.6 | 40 | do | do |
| | WIRELESS | 2 | .02214 | 7 | .064 | 15 | 510 | do | do |
| | SEARCHLIGHT | | | | | | | | |
| | MASTHEAD LIGHT | 2 | .00194 | 3 | .029 | 1.12 | 120 | do | do |
| | SIDE LIGHTS | 2 | .00194 | 3 | .029 | 1.12 | 90 | do | do |
| | COMPASS LIGHTS | 2 | .00194 | 3 | .029 | .38 | 60 | do | do |
| | MAIN DECK LIGHTS | 2 | .00194 | 3 | .029 | 1.12 | 660 | do | do |
| | CARGO LIGHTS | 2 | .003 | 70 | .076 | 5.6 | 60 | do | Bob 2yr Hex |
| | ARC LAMPS | | | | | | | | |
| | HEATERS | | | | | | | | |

| Ref. No. | DESCRIPTION | No. of Motors | Effective Area of each Conductor Sq. Ins. | COMPOSITION OF STRAND | | Total Maximum Current Ampères | 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 | 2 | .1009 | 19 | .083 | 125 | 65 | paper | L.C.A. Braided |
| | 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 | 1 | .02214 | 7 | .064 | 52 | 115 | do | do |
| | WORKSHOP MOTOR | | | | | | | | |
| | VENTILATING FANS | | | | | | | | |
| | Boiler draught fan | 2 | .02214 | 7 | .064 | 40 | 50 | do | do |
| | Main feed pump | 1 | .02214 | 7 | .064 | 52 | 70 | do | do |
| | M.G. lighting set | 1 | .02214 | 7 | .064 | 42 | 30 | do | do |
| | Refrigerator | 1 | .00701 | 7 | .036 | 30 | 30 | do | do |
| | Sea water pump | 1 | .00701 | 7 | .036 | 50 | 50 | rubber | L.C.A. Braided |
| | Bunkerless system | 2 | .00701 | 7 | .036 | 8.6 | 100 | do | do |

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. LD Electrical Engineers. Date 11th October 1922.

COMPASSES.

Distance between electric generators or motors and standard compass 240 feet ✓

Distance between electric generators or motors and steering compass 50 feet ✓

The nearest cables to the compasses are as follows:—

A cable carrying .28 Ampères on the ~~foot~~ standard compass 7 feet from steering compass.

A cable carrying .28 Ampères 7 feet from standard compass on the ~~foot~~ from steering compass.

A cable carrying 6.6 Ampères 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 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 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.

SIR JAMES LAING & SONS, LIMITED.
James Laing
 Director

Builder's Signature. Date

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

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

The above installation is in accordance with the Society's Rules.
 This vessel is eligible in my opinion for notation Elec Light, wireless

It is submitted that this vessel is eligible for THE RECORD. Elec. Light.
A.H.B.
 2/11/22

Total Capacity of Generators 202 Kilowatts

The amount of Fee ... £ 36 : 11 : 11th Oct. 19 22

Travelling Expenses (if any) £ : : See debit book.

W.T. Badger
 Surveyor to Lloyd's Register of Shipping.

Committee's Minute

Assigned

Im. 3. 22.—Transfer. (The Surveyors are requested not to write on or below the space for Committee's Minute.)



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