

REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office 18 OCT 1927

Date of writing Report 10 When handed in at Local Office 17 OCT 1927 Port of Newcastle-on-Tyne

No. in Survey held at SUNDERLAND Date, First Survey Sep. 5 Last Survey Sep. 29 1927
Reg. Book. (Number of Visits 6)

on the 55 IRENE S. EMBRICOS

Tons { Gross 4164
Net 3754

Built at SUNDERLAND By whom built SHORT BROS. LTD. Yard No. 426. When built 1927

Owners S. G. Embricos Port belonging to Athens

Electric Light Installation fitted by SUNDERLAND FORGE & ENGINEERING CO Contract No. When fitted 1927

System of Distribution DOUBLE WIRE

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 YES, 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 —

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 MAIN 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 MAIN 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 micaite 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 DOUBLE POLE SWITCH &

FUSES FOR MAIN GENERATOR, SINGLE POLE SWITCH & DOUBLE POLE FUSES FOR 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 EARTH LAMP SWITCH &

FUSE ON EACH POLE

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



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

Fall of Pressure, state maximum between bus bars and any point of the installation under maximum load 4.55

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 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 _____

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 MAINS - ARMoured & BRAIDED SECURED BY GALV IRON CLIPS.

MACHINERY SPACES: LEAD COVERED, ARMoured & BRAIDED SECURED BY GALV IRON CLIPS, ACCOMM. - LEAD COVERED SECURED 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 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 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 _____

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.

Secondary Batteries, are they constructed and fitted as per Rule _____

Fittings, are all fittings on weather decks, in storerooms and engine rooms and where 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 _____

how are the cables led _____

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, laced 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 _____

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 _____

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

PARTICULARS OF GENERATING PLANT.

| DESCRIPTION OF GENERATOR. | No of | RATED AT | | | | DRIVEN BY | WHERE DRIVEN BY AN INTERNAL COMBUSTION ENGINE. | |
|---------------------------|-------|------------|--------|-------|----------------|--------------|--|----------------------|
| | | Kilowatts. | Volts. | Amps. | Revs. per Min. | | Fuel Used. | Flash Point of Fuel. |
| MAIN | 1 | 10 | 110 | 91 | 380 | STEAM ENGINE | | |
| AUXILIARY | — | | | | | | | |
| 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. Amps. | Approximate Length. (Lead and Return.) Feet. | Insulated with | HOW PROTECTED. |
|----------|------------------------|--------------------|--|------------------------|-----------|------------------------------|--|----------------|----------------------------------|
| | | | | No. | Diameter. | | | | |
| | MAIN GENERATOR... | 2 | .10090 | 19 | .1483 | 91 | 40 | V.I.R. | LEAD COVERED ARMoured & BRAIDED. |
| | EQUALISER CONNECTIONS | — | | | | | | | |
| | AUXILIARY GENERATOR | — | | | | | | | |
| | EMERGENCY GENERATOR | — | | | | | | | |
| | ROTARY TRANSFORMER... | — | | | | | | | |
| | AUXILIARY SWITCHBOARDS | — | | | | | | | |
| | ENGINE ROOM | 2 | .00194 | 3 | .029 | 5.48 | 30 | V.I.R. | LEAD COVERED ARMoured & BRAIDED. |
| | BOILER ROOM | — | | | | | | | |
| | ACCOMMODATION. FORWARD | 2 | .01462 | 7 | .052 | 15.32 | 292 | V.I.R. | ARMoured & BRAIDED. |
| | " AFT. | 2 | .00701 | 7 | .036 | 14.5 | 96 | V.I.R. | ARMoured & BRAIDED. |
| | NAVIGATION. | 2 | .01462 | 7 | .052 | 7.02 | 331 | V.I.R. | ARMoured & BRAIDED. |
| | WIRELESS | 2 | .00701 | 7 | .036 | 2.27 | 304 | V.I.R. | ARMoured & BRAIDED. |
| | SEARCHLIGHT | — | | | | | | | |
| | MASTHEAD LIGHT... | 2 | .00194 | 3 | .029 | .9 | 528 | V.I.R. | ARMoured & BRAIDED. |
| | SIDE LIGHTS | 2 | .00194 | 3 | .029 | .9 | 92 | V.I.R. | LEAD COVERED. |
| | COMPASS LIGHTS | 2 | .00194 | 3 | .029 | .2 | 32 | V.I.R. | LEAD COVERED. |
| | POOP LIGHTS | 2 | .00701 | 7 | .036 | 3.9 | 336 | V.I.R. | ARMoured & BRAIDED. |
| | CARGO LIGHTS | 2 | .00701 | 7 | .036 | 5.5 | 208 | V.I.R. | ARMoured & BRAIDED. |
| | ARC LAMPS | — | | | | | | | |
| | HEATERS | — | | | | | | | |

MOTOR CONDUCTORS.

| Ref. No. | DESCRIPTION. | No. of Motors. | Effective Area of each Conductor. Sq. Ins. | COMPOSITION OF STRAND. | | Total Maximum Current. Amps. | 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.

The Sunderland Forge & Engineering Co. Limited. Electrical Engineers. Date 5th Oct. 1927.

J. Thompson

COMPASSES.

Distance between electric generators or motors and standard compass 110 FEET

Distance between electric generators or motors and steering compass 102 FEET

The nearest cables to the compasses are as follows:—

A cable carrying 7.02 Ampères 10 feet from standard compass 10 feet from steering compass.

A cable carrying .2 Ampères 10 feet from standard compass LED INTO feet from steering compass.

A cable carrying .2 Ampères LED INTO feet from standard compass 10 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 *no* degrees on *any* course in the case of the standard

compass, and *no* degrees on *any* course in the case of the steering compass. *J. W. Lewis*

FOR SHORROTT BROTHERS, LIMITED.

E. W. Shorrott
DIRECTOR

Builder's Signature.

Date 14 Oct 1927.

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 installation has been built under Special Survey and the materials and workmanship are good. After being fitted in the vessel it was tried under full working conditions with satisfactory results. The vessel is in my opinion eligible to have the note Electric Light marked in the Register Book.*)

Elec. Light
J. W. Lewis

Total Capacity of Generators 10 Kilowatts.

The amount of Fee ... £ 10 : 0 0

When applied for, 7th Oct 1927

Travelling Expenses (if any) £ :

When received, 26.10.27

A. I. Griffiths.

Surveyor to Lloyd's Register of Shipping.

Committee's Minute

Assigned

Elec Light

Im. 1.20.—Transfer. (The Surveyors are requested not to write on or back the space for Committee's Minute.)



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