

REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office 13 MAY 1925

Date of writing Report 5.5.1925 When handed in at Local Office 12.5.1925 Port of GLASGOW.
 No. in Survey held at GLASGOW. Date, First Survey 18.2.25 Last Survey 1.5.1925
 Reg. Book. 90776. on the S.S. "ST. JULIEN" (Number of Visits 7)
 Built at CLYDEBANK. By whom built MESSRS J. BROWN & CO Yard No. 509 When built 1925.
 Owners GREAT WESTERN RAILWAY. Port belonging to LONDON.
 Electric Light Installation fitted by MESSRS JOHN BROWN & CO Contract No. 509 When fitted 1925.

System of Distribution TWO WIRE INSULATED
 Pressure of supply for Lighting 110 volts, Heating 110 volts, Power 110 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 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 IN DYNAMO ROOM BETWEEN FRAMES 57-67 MAIN DECK.
 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 IN DYNAMO 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, incombustible non-absorbent materials YES, is all insulation of high dielectric strength and of permanently high insulation resistance —, 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 EACH GENERATOR IS CONTROLLED BY 500 AMP D.P. CIRCUIT BREAKER WITH ADJUSTABLE OVERLOAD AND NO-VOLT RELEASE AND WITH TIME LAG DEVICE. EACH BRANCH CIRCUIT IS PROTECTED BY D.P. FUSES AND A S.P. SELECTOR SWITCH GIVING SUPPLY FROM EITHER GENERATOR.
 Instruments on main switchboard 2 ammeters 1 voltmeter — 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 TWO LAMPS CONNECTED IN SERIES, WITH SWITCHES, AND WIRE BETWEEN LAMPS CONNECTED TO EARTH.
 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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005321-005324-0146 1/2

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 3.7 TO FURTHEST LAYER

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 ---

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 SUPPORTED BY PERFORATED STEEL PLATING PROVIDED TO STEEL BULKHEADS PROTECTION: LEAD COVERED AND STEEL WIRE ARMOURD IN ENGINE ROOM. LEAD COVERED ELSEWHERE

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

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 ---

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 NO

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 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 --- 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 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 ---

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. | Ampères. | Revs. per Min. | | Fuel Used. | Flash Point of Fuel. |
| MAIN | 2 | 90 | 110 | 182 | 575 | ENCLOSED FORCED | | |
| AUXILIARY | | | | | | LUBRICATION COMPOUND | | |
| EMERGENCY | | | | | | 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. Ampères. | Approximate Length. (Lead and Return.) Feet. | Insulated with | HOW PROTECTED. |
|----------|--------------------------------|--------------------|--|------------------------|-----------|---------------------------------|--|----------------|--------------------------|
| | | | | No. | Diameter. | | | | |
| | MAIN GENERATOR | 8 PER PHASE | 30240 | 37 | .103 | 227 EACH CONDUCTOR | | RUBBER. | LEAD COVERED |
| | AUXILIARY GENERATOR | | | | | | | | |
| | EMERGENCY GENERATOR | | | | | | | | |
| | ROTARY TRANSFORMER | | | | | | | | |
| | AUXILIARY SWITCHBOARDS | | | | | | | | |
| E | ENGINE ROOM | 2 | .01462 | 7 | .052 | 36 | 30 | " | " |
| | BOILER ROOM | | | | | | | | |
| A | NAVIGATION & OFFICERS | 2 | .00701 | 7 | .036 | 15.4 | 300 | " | " |
| B | 1ST CL. ACCOMMODATION FORWARD | 2 | .01462 | 7 | .052 | 35.9 | 220 | " | " |
| C | " " MID | 2 | .01046 | 7 | .044 | 24.6 | 100 | " | " |
| D | 2ND " " AFT | 2 | .01046 | 7 | .044 | 23.6 | 300 | " | " |
| F | ENGINEERS CUBEN & OIL PURIFIER | 2 | .01046 | 7 | .044 | 22.5 | 30 | " | " |
| G | CARGO CLUSTERS (FORWARD) | 2 | .01046 | 7 | .044 | 24.4 | 30 | " | " |
| | GALLEY FISH FREEZER | 2 | .03960 | 19 | .052 | 64.0 | 90 | " | " |
| | GALLEY GRILL | 2 | .03960 | 19 | .052 | 58.0 | 90 | " | " |
| | GALLEY TOASTER | 2 | .01046 | 7 | .044 | 25.0 | 90 | " | " |
| | WIRELESS | 2 | .00455 | 7 | .029 | 8 | 200 | " | " |
| | SEARCHLIGHT | | | | | | | | |
| | MASTHEAD LIGHT | 4 | .00194 | 3 | .029 | .91 | 300 | " | LEAD COVERED AND BRAIDED |
| | SIDE LIGHTS | 4 | .00194 | 3 | .029 | .91 | 120 | " | LEAD COVERED |
| | COMPASS LIGHTS | 6 | .00194 | 3 | .029 | .91 | 30 | " | " |
| | POOP LIGHTS | | | | | | | | |
| See G. | CARGO LIGHTS | | | | | | | | |
| | ARC LAMPS | | | | | | | | |
| | HEATERS | | | | | | | | |

MOTOR CONDUCTORS.

| 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 | | | | | | | | |
| | 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 | | | | | | | | |
| | WORKSHOP MOTOR | | | | | | | | |
| H | VENTILATING FANS | 2 | .03960 | 19 | .052 | 56 | 240 | RUBBER. | LEAD COVERED. |
| J | " " " | 4 | .10090 | 12 | .083 | 76 | 10 | " | " |
| | GALLEY RANGE BLOWER | 2 | .00194 | 3 | .029 | .91 | 90 | " | " |
| | OIL PURIFIER PUMP MOTOR | 2 | .00299 | 3 | .036 | 9.5 | 300 | " | LEAD COV. ARM. & BRAIDED. |

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.

John Brown & Company, Limited.

Electrical Engineers.

Date 8th May 1925

M. Henderson
 Clydebank Secretary.

COMPASSES.

Distance between electric generators or motors and standard compass 23 FEET.

Distance between electric generators or motors and steering compass 23 FEET.

The nearest cables to the compasses are as follows:—

A cable carrying 15.4 Ampères 10 feet from standard compass 8 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 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 _____ course in the case of the standard compass, and NIL. degrees on _____ course in the case of the steering compass.

John Brown & Company, Limited.

M. Henderson Builder's Signature.
 Clydebank Secretary.

Date 8th May 1925

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 fitted on board under special survey tested under full working conditions and found satisfactory. The workmanship was found to be of a high standard.

Glec. Light
13/5/25

Total Capacity of Generators 40. Kilowatts

The amount of Fee ... £ 25.0.0. When applied for, 5/5/25

Travelling Expenses (if any) £ : : When received, 10/5/25

J. Rankin
 Surveyor to Lloyd's Register of Shipping.

Committee's Minute **GLASGOW 12 MAY 1925**

Assigned *Glec. Light.*

A.B.
11/5/25

Im. 24.—Transfer. (The Sturgeons are requested not to write on or below the space for Committee's Minute.)