

Rpt. 13.

No. 49773

REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office 20 NOV 1929

Date of writing Report 10.10.1929 When handed in at Local Office 18.11.1929 Port of GLASSGOW.

No. in Survey held at GREENOCK. Date, First Survey 11.9.29 Last Survey 5.11.1929
Reg. Book. 39479 on the S.S. "Barrowden" (Number of Visits 7)

Built at GREENOCK. By whom built THE GREENOCK D.S. Y.D. Yard No. 417 When built 1929
Owners MESSRS THE BARR SHIPPING CO. Port belonging to GLASSGOW. Tons {Gross 4998. Net

Electric Light Installation fitted by W. Muir Goodfellow Bechtel Contract No. 417 When fitted 1929.

System of Distribution Two WIRE INSULATED

Pressure of supply for Lighting 110 VOLTS volts, Heating _____ volts, Power 110 _____ 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 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 WING OF ENGINE ROOM (FLOOR LEVEL)

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 AFT BULKHEAD STARBOARD WING 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 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

D.P. SWITCH & FUSES FOR THE GENERATOR. SP. SWITCH & D.P. FUSES FOR EACH OUTGOING CIRCUIT

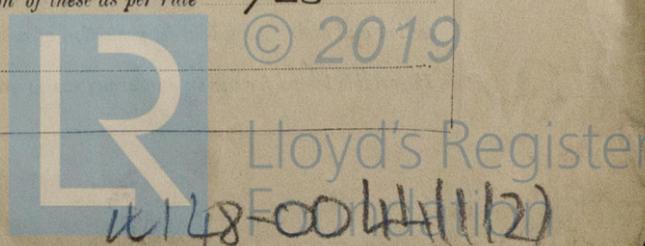
Instruments on main switchboard 1 ammeters 1 voltmeters _____ synchronising device for paralleling purposes.

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 2.5 Volts

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 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 YES

Support and Protection of Cables, state how the cables are supported and protected ACCOMODATION LEAD COVERED
SECURED WITH BRASS SCREWS. MACHINERY SPACES ETC ARMoured CABLES SECURED WITH GI. SADDLES

If cables are run in wood casings, are the casings and caps secured by screws YES, are the cap screws of brass YES, are the cables run in separate grooves YES

Refrigerated Chambers, if lights are fitted, are the cables and fittings in accordance with the special requirements YES

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 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 23V

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 YES

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 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 YES

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 23V

where are the controlling switches situated 23V

Searchlight Lamps, No. of 23V, whether fixed or portable 23V, are their fittings as per Rule 23V

Arc Lamps, other than searchlight lamps, No. of 23V, are their live parts insulated from the frame or case 23V, are their fittings as per Rule 23V

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 axes 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 YES

if not of this type, state distance of the combustible material horizontally or vertically above the motors 23V and 23V

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

Lightning Conductors, where lightning conductors are required, are these fitted as per Rule 23V

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 23V

If portable lamps for use in dangerous spaces are supplied, are they of a type approved by the Home Office 23V

PARTICULARS OF GENERATING PLANT.

| DESCRIPTION OF GENERATOR. | No. of | RATED AT | | | DRIVEN BY | WHERE DRIVEN BY AN INTERNAL COMBUSTION ENGINE. | |
|---------------------------|--------|------------|--------|----------|-----------|--|------------|
| | | Kilowatts. | Volts. | Amperes. | | Revs. per Min. | Fuel Used. |
| MAIN | 1 | 12 | 110 | 109 | 450 | 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. Amperes. | Approximate Length. (Lead and Return.) Feet. | Insulated with | HOW PROTECTED. |
|----------|-------------------------------|--------------------|--|------------------------|-----------|---------------------------------|--|----------------|----------------|
| | | | | No. | Diameter. | | | | |
| 1 | MAIN GENERATOR | 2 | 100 | 19 | 0.83 | 109 | 24 | RUBBER | LEAD & ARMOUR |
| | EQUALISER CONNECTIONS | | | | | | | | |
| | AUXILIARY GENERATOR | | | | | | | | |
| | EMERGENCY GENERATOR | | | | | | | | |
| | ROTARY TRANSFORMER | | | | | | | | |
| | AUXILIARY SWITCHBOARDS | | | | | | | | |
| 2 | ENGINE ROOM | 2 | 0.07 | 7 | 0.36 | 19 | 10 | " | " |
| | BOILER ROOM | | | | | | | | |
| 3 | ACCOMODATION ENGINEERS & POOP | 2 | 0.07 | 7 | 0.36 | 14 | 55 | " | " |
| 4 | SALOON & OFFICERS & FORWARD | 2 | 0.07 | 7 | 0.36 | 12 | 200 | " | " |
| 4A | NAVIGATION INDICATOR | 2 | 0.045 | 7 | 0.29 | 2.7 | 260 | " | " |
| 5 | WIRELESS SEARCHLIGHT | 2 | 0.07 | 7 | 0.36 | 14 | 260 | " | " |
| 6 | MASTHEAD LIGHT | 2 | 0.02 | 3 | 0.29 | 0.4 | 500 | " | " |
| 7 | SIDE LIGHTS | 2 | 0.02 | 3 | 0.29 | 0.4 | 80 | " | " |
| 8 | COMPASS LIGHTS | 2 | 0.02 | 3 | 0.29 | 0.4 | 60 | " | " |
| 9 | POOP LIGHTS | 2 | 0.045 | 7 | 0.29 | 7 | 380 | " | " |
| 10 | CARGO LIGHTS | 2 | 0.01 | 7 | 0.44 | 27 | 55 | " | " |
| | 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 | | | | | | | | |
| 11 | REFRIG MOTOR | 1 | 0.145 | 7 | 0.52 | 30 | 60 | RUBBER | LEAD & ARMOUR |

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.

FOR & ON BEHALF OF

W. MUIR, GOODFELLOW & CO. LTD.

Electrical Engineers.

Date 16.10.29

W. Goodfellow Director

COMPASSES.

Distance between electric generators or motors and standard compass 160 ft.

Distance between electric generators or motors and steering compass 156 ft.

The nearest cables to the compasses are as follows:—

A cable carrying .12 Ampères 10 feet from standard compass 12 feet from steering compass.

A cable carrying .25 Ampères in feet from standard compass in 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 any course in the case of the standard

compass, and *Nil* degrees on any course in the case of the steering compass.

THE GREENOCK DOCKYARD CO., LTD.

J. Turnbull Director

Builder's Signature.

Date 9.11.29

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 load conditions and found satisfactory. The materials and workmanship were found to be good and sound.*

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

W. J. Light

2/11/29

A.S.
19/11/29

Total Capacity of Generators 12 Kilowatts.

The amount of Fee ... £ 12.0.0 : *When applied for. C.L.K.*

Travelling Expenses (if any) £ 10.6. : *When received. 17/10/29*

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

Committee's Minute GLASGOW 19 NOV 1929

Assigned *Elec. Light*

Im. 228—Transfer. (The Surveyors are requested not to write on or below the space for Committee's Minute.)



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