

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

JUL 26 1937

Received at London Office

Date of writing Report 8th July 1937 when handed in at Local Office 12 July 1937 Port of Sunderland

No. in Survey held at Sunderland Date, First Survey 1st May Last Survey 9 July 1937

Reg. Book. Suppt 37358 on the S.S. "BIDDLESTONE" Tons { Gross 4910 Net 2953

Built at Sunderland By whom built Shott Bros. Ld. Yard No. 450 When built 1937

Owners White Shipping Co. Ld. Port belonging to Newcastle.

Electric Light Installation fitted by Campbell & Osierwood Ld. Contract No. 450 When fitted 1937

Is the Vessel fitted for carrying Petroleum in bulk no

System of Distribution Double wire

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

Direct or Alternating Current, Lighting Direct Power Direct

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 temperature rise 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 Only one fitted, is an adjustable regulating resistance fitted in series with each shunt field no

Have certificates of test results for machines under 100 kw. been submitted and approved yes

Have machines over 100 kw. been inspected by the Surveyors during manufacture and testing —

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 Engine room starboard side, 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 Engine room starboard side

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

is it of an approved type 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 —

is the non-hygroscopic insulating material of an approved type —, 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, temperature rise of omnibus bars yes

individual fuses to voltmeter, pilot or earth lamp yes, are moving parts of switches alive in the "off" position no

are all screws and nuts securing connections effectively locked yes, are any fuses fitted on the live side of switches no

Main Switchgear, description of switchgear for each generator and each outgoing circuit, and arrangement of equalizer switches D.P. cws. + D.P. fuses on dynamo mains; S.P. cws. + D.P. fuses on outgoing circuits.

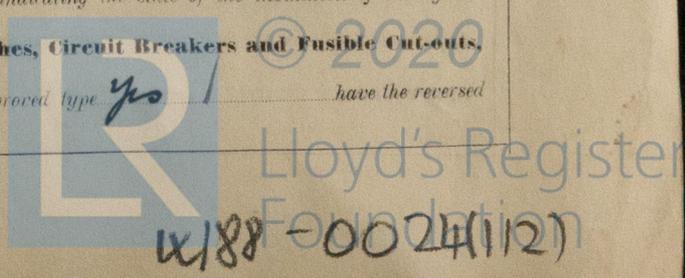
Are turbine driven generators fitted with emergency trip switch as per rule —

Are cupboards or compartments containing switchboards composed of fire-resisting material or lined with approved material —

Instruments on main switchboard 1 ammeter, 1 voltmeter, — synchronising device for paralleling purposes. For compound machines is the ammeter connected on the opposite pole to equaliser connection —

Earth Testing, state what means are provided at the main switchboard for indicating the state of the insulation of the system E lamps coupled to E through switches

Switches, Circuit Breakers and Fusible Cut-outs, do these comply with the requirements of the Rules yes, are the fusible cutouts of an approved type yes, have the reversed —



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current protection devices been tested under working conditions —

construction, protection, insulation, material, and position of these as per rule *yes*

Cables: Single, twin, concentric, or multicore *single* are the cables insulated and protected as per Tables IV, V, X or XI of the Rules *yes*

If the cables are insulated otherwise than as per Rule, are they of an approved type —

any point of the installation under maximum load *4.0 volts*

area of 0.04 square inch and above provided with soldering sockets *yes*

If conductors are paper or varnished cambric insulated, is the dielectric at the exposed ends of the conductor protected from moisture by being suitably sealed with insulating compound —

insulating compound —, or waterproof insulating tape —

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*

Are cables in machinery spaces, galleys, laundries, bathrooms and lavatories lead covered or run in conduit *yes*

Support and Protection of Cables, state how the cables are supported and protected *V.I.R. Taped & braided in heavy gauge conduit in two decks & engine room; h.t. cables clipped up in accom.*

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

Refrigerated Chambers, are the cables and fittings in accordance with the special requirements —

Joints in Cables, state if any, and how made, insulated, and protected *home 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 & fibre*

Earthing Connections, state what earthing connections are fitted and their respective sectional areas

are their connections made as per Rule *yes*

Alternative Lighting, are the groups of lights in the propelling machinery space arranged as per Rule *yes*

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 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 stokeholds and engine rooms and wherever exposed to drip or condensed moisture, watertight

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 —

are all fittings suitably ventilated *yes*

are all switches and lampholders constructed wholly of non-ignitable, non-absorbent materials *yes*

Heating and Cooking Appliances, are they constructed and fitted as per Rule —

are air heaters constructed and fitted as per Rule —

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 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 —

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

have machines of over 100 H.P. been inspected by the Surveyors during manufacture and testing —

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 —

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 —

are all fuses of the fitted cartridge type — are they of an approved type —

If portable lamps for use in dangerous spaces are supplied, are they of a self-contained, battery-fed type approved by the Home Office —

Spare Gear, if the vessel is for open sea service have spares been supplied as per Rule *yes*

Joint Boxes, Section and Distribution Boards, is the

Fall of Pressure, state maximum between bus bars and

Paper Insulated and Varnished Cambric Insulated Cables.

Cable Runs, are the cables fixed as far as possible in accessible positions

are the cables and fittings in accordance with the special requirements —

Emergency Supply, state

are the fuses double pole *yes*

are they constructed and fitted as per Rule —

are they protected from mechanical injury and damage from

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PARTICULARS OF GENERATING PLANT.

Table with columns: DESCRIPTION OF GENERATOR, No. of, KILOWATTS, Volts, Amps., Revs. per Min., DRIVEN BY, WHERE DRIVEN BY AN INTERNAL COMBUSTION ENGINE (Fuel Used, Flash Point of Fuel).

GENERATOR, LIGHTING AND HEATING CONDUCTORS.

Table with columns: DESCRIPTION, CONDUCTORS (No. per Pole, Total Nominal Area per Pole Sq. Ins.), COMPOSITION OF STRAND (No., Diameter), TOTAL MAXIMUM CURRENT AMPERES (Circuit, Rule), Approximate Length (Lead and Return) Feet, Insulated with, HOW PROTECTED.

MOTOR CONDUCTORS.

Table with columns: DESCRIPTION, No. of Motors, CONDUCTORS (No. per Pole, Total Nominal Area per Pole Sq. Ins.), COMPOSITION OF STRAND (No., Diameter), TOTAL MAXIMUM CURRENT AMPERES (In Circuit, Rule), Approximate Length (Lead and Return) Feet, Insulated with, HOW PROTECTED.

All Conductors are of annealed copper conforming to British Standard Specification No. 7 (or International Electro-technical Commission Publication No. 28).

The Insulated Conductors are guaranteed to withstand the immersion and resistance tests specified in the Rules.

The foregoing is a correct description.

CAMPBELL & ISHERWOOD, LTD.

PER *Thomas Meadh*

Electrical Engineers.

Date *9th July 1937*

COMPASSES.

Distance between electric generators or motors and standard compass *140 feet*

Distance between electric generators or motors and steering compass *132 feet*

The nearest cables to the compasses are as follows:—

A cable carrying *.14* Amperes *on the* ~~foot from~~ standard compass *8* feet from steering compass.

A cable carrying *.14* Amperes *8* feet from standard compass *on the* ~~foot from~~ steering compass.

A cable carrying _____ Amperes _____ 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 *every* course in the case of the standard compass, and *nil* degrees on *every* course in the case of the steering compass.

For SHORT BROTHERS, LIMITED,

Cl. Short

Builder's Signature.

Date *12th July 1937*

DIRECTOR.

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.) *The above instⁿ has been fitted out under special survey. The workmanship & materials used good. The insulation resistance is good. The instⁿ has been tested throughout & found satisfactory. This vessel is eligible in my opinion for notation DF & E.S.D.*

no id

then

20.7.37

Total Capacity of Generators *10* Kilowatts.

The amount of Fee ... £ *10* : - : *1st July 1937* When applied for.

Travelling Expenses (if any) £ : : *1st July 1937 K. W. W.* When received.

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

Committee's Minute *TUE 20 JUL 1937*

Assigned *See other F.E. report*

750036. - Trans-sec. The Surveyors are requested not to write on or below the space for Committee's Minute.



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