

Rpt. 13.

No. 95349.

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office AUG 24 1937

Date of writing Report

19

When handed in at Local Office

23 AUG 1937

Port of NEWCASTLE-ON-TYNE

No. in Survey held at

Newcastle / Tyne Date, First Survey 10 June

Last Survey 17 Aug 1937

Reg. Book. ~~544~~

21791 on the M.V. "British Resolution"

(Number of Visits 10)

Tons { Gross 8298
Net

Built at Newcastle

By whom built

S.H. & W.R. Ltd.

Yard No.

1514

When built

1937

Owners

British Tanker Co. Ltd.

Port belonging to

London

Electric Light Installation fitted by Swan Hunter & Wigham Richardson Ltd.

Contract No.

1514

When fitted

1937

Is the Vessel fitted for carrying Petroleum in bulk Yes.

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

Yes

, is an adjustable regulating resistance fitted in

series with each shunt field

Yes

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

approved

Yes (Certs. h.w. with)

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

Have certificates for generators under 100 kw. been supplied and approved

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

Engine room starboard side

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

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

Yes

, 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 micanite or other

non-hygroscopic insulating material, and the slab similarly insulated from its framework

Yes

, is the non-hygroscopic insulating material of an approved

type

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

, temperature rise of

omnibus bars

No

, 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

Yes

Main Switchgear, description of switchgear for each generator and each outgoing circuit, and arrangement of equalizer switches

Triple pole CB for each generator. DPS + DP fuses on each outgoing circuit.

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

9

ammeters

3

voltmeters

synchronising device for paralleling purposes.

For compound machines is the ammeter connected on the opposite pole to equaliser connection

Yes

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 & fuses.

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 *Yes.* are all fuses labelled as per rule *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* are the cables insulated and protected as per Tables IV, V, X, XI, XII or XIII of the Rules *Yes*

If the cables are insulated otherwise than as per Rule, are they of an approved type *4.5 Volts.* Fall of Pressure, state maximum between bus bars and any point of the installation under maximum load *Yes* Cable Sockets, are the ends of all cables having a sectional area of 0.04 square inch, and above provided with soldering sockets *Yes* Paper Insulated and Varnished Cambric Insulated Cables.

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 *Yes*, or waterproof insulating tape *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, uplates or other hot objects, or to avoidable risk of mechanical damage *Yes* are cables laid under machines or floorplates *no* if so, are they adequately protected *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 *LCA+B in pipes along ducts, LCA+B in engine room, LCA+B in acc.*

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* If armoured and lead covered cables are secured by metal clips, are the clips spaced as per Table VIII *Yes*

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

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.*

Earthing Connections, state what earthing connections are fitted and their respective sectional areas *Yes* 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* Emergency Supply, state position and method of control of the emergency supply and how the generator is driven *home 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* Secondary Batteries, are they constructed and fitted as per Rule *Yes* are they ventilated 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 *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 rooms. special gaslight fittings.* how are the cables led *in galvanised iron pipe run outside pump room.* where are the controlling switches situated *in midship alleyway.* 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 *Yes* are air heaters constructed and fitted as per Rule *Yes*

Searchlight Lamps, No. of *one* whether fixed or portable *portable* are their fittings as per Rule *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 *Yes* and *Yes*

have machines of over 100 BHP been inspected by the Surveyors during manufacture and testing *Yes* have certificates for all motors for essential services been supplied and approved *Yes* 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 *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 *Yes* are all fuses of the fitted cartridge type *Yes* are they of an approved type *Yes* If portable lamps for use in dangerous spaces are supplied, are they of a self-contained, battery-fed flameproof type approved for use in dangerous spaces *Yes* Spare Gear, if the vessel is for open sea service have spares been supplied as per Rule *Yes* are they suitably stored in dry situations *Yes*

| 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. | Flash Point of Fuel. | |
| MAIN ... | 2 | 30 | 110 | 273 | 550 | 1 Steam, 1 Diesel | | | |
| AUXILIARY ... | 1 | 8 | 110 | 73 | 750 | Steam engine | | | |
| EMERGENCY ... | | | | | | | | | |
| ROTARY TRANSFORMER | | | | | | | | | |

| GENERATOR, LIGHTING AND HEATING CONDUCTORS. | | | | | | | | | |
|---|---------------|--------------------------------------|------------------------|-----------|---------------------------------|-------|--|----------------|----------------|
| DESCRIPTION. | CONDUCTORS. | | COMPOSITION OF STRAND. | | TOTAL MAXIMUM CURRENT. AMPERES. | | Approximate Length. (Lead and Return.) Feet. | Insulated with | HOW PROTECTED. |
| | No. per Pole. | Total Nominal Area per Pole Sq. Ins. | No. | Diameter. | In Circuit. | Rule. | | | |
| MAIN GENERATOR ... | 1 | .4 | 61 | .093 | 273 | 288 | 70 | V.I.R | LCA+B |
| EQUALISER CONNECTIONS ... | 1 | .15 | 37 | .072 | — | 152 | 35 | 50 | 50 |
| AUXILIARY GENERATOR ... | 1 | .06 | 19 | .064 | 73 | 83 | 70 | 50 | 50 |
| EMERGENCY GENERATOR ... | | | | | | | | | |
| ROTARY TRANSFORMER } MOTOR GENERATOR... | | | | | | | | | |
| ENGINE ROOM... | 1 | .04 | 19 | .052 | 53 | 64 | 40 | 50 | 50 |
| BOILER ROOM... | | | | | | | | | |
| AUXILIARY SWITCHBOARDS ... | | | | | | | | | |
| Navigation | 1 | .01 | 7 | .044 | 10 | 31 | 480 | 50 | 50 |
| ACCOMMODATION | | | | | | | | | |
| midship forward | 1 | .06 | 19 | .064 | 45 | 83 | 44.0 | 50 | 50 |
| aft acc ⁿ | 1 | .0225 | 7 | .064 | 31 | 46 | 200 | 50 | 50 |
| WIRELESS ... | 1 | .0225 | 7 | .064 | 15 | 46 | 480 | 50 | 50 |
| SEARCHLIGHT ... | 1 | .04 | 19 | .052 | 60 | 64 | 880 | 50 | 50 |
| MASTHEAD LIGHT ... | 1 | .002 | 3 | .029 | .36 | 7.8 | 420 | 50 | LCA+B |
| SIDE LIGHTS ... | 1 | .002 | 3 | .029 | .26 | 7.8 | 80 | 50 | 50 |
| COMPASS LIGHTS ... | 1 | .002 | 3 | .029 | .1 | 7.8 | 40 | 50 | 50 |
| POOP LIGHTS ... | 1 | .002 | 3 | .029 | .36 | 7.8 | 480 | 50 | 50 |
| CARGO LIGHTS ... | | | | | | | | | |
| HEATERS ... | | | | | | | | | |

| MOTOR CONDUCTORS. | | | | | | | | | | |
|----------------------------|----------------|---------------|--------------------------------------|------------------------|-----------|---------------------------------|-------|--|----------------|----------------|
| DESCRIPTION. | No. of Motors. | CONDUCTORS. | | COMPOSITION OF STRAND. | | TOTAL MAXIMUM CURRENT. AMPERES. | | Approximate Length. (Lead and Return.) Feet. | Insulated with | HOW PROTECTED. |
| | | No. Per Pole. | Total Nominal Area per Pole Sq. Ins. | No. | Diameter. | In Circuit. | Rule. | | | |
| 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 | 3 | 1 | .0045 | 7 | .029 | 16 | 18.2 | 80 | V.I.R | LCA+B. |
| Oil Purifier | | | | | | | | | | |
| WINCHES, AFT ... | | | | | | | | | | |
| STEERING GEAR— | | | | | | | | | | |
| (a) MOTOR GENERATOR... | | | | | | | | | | |
| (b) MAIN MOTOR ... | | | | | | | | | | |
| WORKSHOP MOTOR ... | 1 | 1 | .01 | 7 | .044 | 24 | 31 | 100 | 50 | 50 |
| VENTILATING FANS ... | 3 | 1 | .0045 | 7 | .029 | 10 | 18.2 | 100 | 50 | 50 |
| do do | 1 | 1 | .01 | 7 | .044 | 10 | 31 | 400 | 50 | 50 |
| Refrg. machine | 1 | 1 | .04 | 19 | .052 | 64 | 64 | 100 | 50 | 50 |
| B. B. Fan | 1 | 1 | .0145 | 7 | .052 | 36 | 37 | 80 | 50 | 50 |
| Eng Room Crane | 1 | 1 | .01 | 7 | .044 | 24 | 31 | 80 | 50 | 50 |
| Vapour Eject. Fan | 1 | 1 | .0045 | 7 | .029 | 16 | 18.2 | 100 | 50 | 50 |
| Priming pump | 1 | 1 | .0045 | 7 | .029 | 12 | 18.2 | 100 | 50 | 50 |
| Silt pump | 1 | 1 | .002 | 3 | .029 | 4 | 7.8 | 100 | 50 | 50 |

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The Electrical Equipment is installed in accordance with the approved plans.

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

The foregoing is a correct description.

For
SWAN, HUNTER, & WIGHAM RICHARDSON, LTD.
[Signature]

Electrical Engineers.

Date *10th Aug 1937*

COMPASSES.

Minimum distance between electric generators or motors and standard compass *210 feet*

Minimum distance between electric generators or motors and steering compass *205 feet*

The nearest cables to the compasses are as follows:—

A cable carrying *-1* Ampères *on the* *6* feet from standard compass *6* feet from steering compass.

A cable carrying *-1* Ampères *6* feet from standard compass *on the* *6* feet from steering compass.

A cable carrying *-1* Ampères *6* feet from standard compass *on the* *6* feet from steering compass.

Have the compasses been adjusted with and without the electric installation at work at full power *Yes* *to be filled in after adjustment of compasses*

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.

[Signature] Builder's Signature. Date *12 August 1937*

Is this installation a duplicate of a previous case *Yes* If so, state name of vessel *L.V. "British Diligence"*

General Remarks (State quality of workmanship, opinions as to class, &c. *The above installation has been fitted out under special survey. The materials used and the workmanship are good. On completion the dynamo, governors, circuit breakers, main switchboard, switches, fuses, cables, motors and fittings were examined and tested under working conditions and found satisfactory and suitable for a classed vessel. The insulation resistance was tested and found good. This vessel is eligible in my opinion to have the notations E.S.D. and D.F. in the Register Book.*

Noted

Ad 25/8/37

Total Capacity of Generators *68* Kilowatts.

The amount of Fee ... £ *29 : 6* : *21 AUG 1937*

Travelling Expenses (if any) £ : : *30.8.37*

Committee's Minute

Assigned

FRI 27 AUG 1937

See F.E. mch. rpt

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



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