

Rpt. 13.

No. 1780.

# REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL) 26 MAR 1936

Received at London Office

Date of writing Report 23. 3. 1936 When handed in at Local Office 10 Port of BREMEN

No. in Survey held at WESERMÜNDE Date, First Survey 3<sup>rd</sup> Jan. 36 Last Survey 7<sup>th</sup> March 1936  
 Reg. Book. (Number of Visits 10)

37972 on the STEEL SINGLE SC. STEAMER ETHIOPIAN Tons { Gross 5424  
 Net 3203

Built at WESERMÜNDE By whom built DEUTSCHE SCHIFF UND MASCHINENBAU AG WERK: SEEBECK Yard No. 896 When built 1936

Owners UNITED AFRICA COMPANY Port belonging to LIVERPOOL

Electric Light Installation fitted by WICHMANN & CO Contract No. - When fitted 1936

Is the Vessel fitted for carrying Petroleum in bulk no

System of Distribution two wire system ✓

Pressure of supply for Lighting 110 volts, Heating - 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 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 no ✓, 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 ✓ 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 micanite 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 no ✓

For each generator and for each outgoing circuit a double pole linked switch and a fuse on each pole

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 -

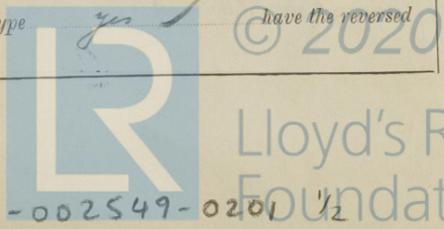
Instruments on main switchboard 2 ammeters 2

voltmeters - 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 yes ✓

2 Earth lamps ✓ 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 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, V, X or XI of the Rules German Standard

If the cables are insulated otherwise than as per Rule, are they of an approved type no Fall of Pressure, state maximum between bus bars and

any point of the installation under maximum load 4-5 Vces 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 no paper insulated cables or waterproof insulating tape 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 Are cables in machinery spaces, galleys, lavatories, bathrooms and lavatories lead covered or run in conduit lead covered

Support and Protection of Cables, state how the cables are supported and protected Rattles on deck are led through gas

Antes, otherwise on strong iron cable leads

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 in watertight joint boxes

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 no

no, 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 no

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 no

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

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

no, how are the cables led

where are the controlling switches situated no

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 no, are air heaters constructed and fitted as per Rule no

Searchlight Lamps, No. of 1, whether fixed or portable portable, are their fittings as per Rule yes

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

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 no

no, if not of this type, state distance of the combustible material horizontally or vertically above the motors no and no

have machines of over 100 BHP been inspected by the Surveyors during manufacture and testing no 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 filled cartridge type no are they of an approved type no

If portable lamps for use in dangerous spaces are supplied, are they of a self-contained, battery-fed type approved by the Home Office no

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

PARTICULARS OF GENERATING PLANT.

Table with columns: DESCRIPTION OF GENERATOR, No. of, RATED AT (Kilowatts, Volts, Ampères, Revs. per Min.), DRIVEN BY, WHERE DRIVEN BY AN INTERNAL COMBUSTION ENGINE (Fuel Used, Flash Point of Fuel). Includes MAIN, AUXILIARY, EMERGENCY, and ROTARY TRANSFORMER.

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 (Ampères) (Circuit, Rule), Approximate Length (Lead and Return) Feet, Insulated with, HOW PROTECTED. Lists various components like MAIN GENERATOR, EQUALISER CONNECTIONS, etc.

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 (Ampères) (Circuit, Rule), Approximate Length (Lead and Return) Feet, Insulated with, HOW PROTECTED. Lists various pumps and motors like BALLAST PUMP, MAIN BILGE LINE PUMPS, etc.

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.

**Wiechmann & Co.**  
*Wiechmann & Co.*

Electrical Engineers.

Date *Becken*  
*21. III. 36*

**COMPASSES.**

Distance between electric generators or motors and standard compass *16 feet*

Distance between electric generators or motors and steering compass *18 "*

The nearest cables to the compasses are as follows:—

A cable carrying *5* Ampères *10* feet from standard compass *16* feet from steering compass.

A cable carrying *0,2* Ampères *elsew* feet from standard compass *elsew* 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 *all* course in the case of the standard compass, and *nil* degrees on *all* course in the case of the steering compass.

*Deutsche Schiff- und Maschinenbau Aktiengesellschaft*

Work: *Seebeck*

*Wesermünde*

Builder's Signature.

Date *20. 3. 36*

*H. Hooper* *H. J. Hoff*

Is this installation a duplicate of a previous case *yes* If so, state name of vessel *NIGERIAN*

General Remarks (State quality of workmanship, opinions as to class, &c. *This Electric Installation*)

*has been fitted in accordance with the approved plans, the Secretary's letters and in conformity with the requirements of the Rules. The materials used in the construction and the workmanship are of good quality. Regarding conductors the German Standards have been applied generally. The whole Installation has been tested under working conditions and found in order.*

*Noted*

*from*

*27.3.36*

Total Capacity of Generators *30* Kilowatts.

The amount of Fee ... *RM 450* : *24.3.19.36*

Travelling Expenses (if any) £ : : *24.4.19.36*

*A. Carstensen*  
Surveyor to Lloyd's Register of Shipping.

Committee's Minute

*FRI. 27 MAR 1936*

Assigned

*See other Rpt*

*Ann. 1780*