

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office 14 SEP 1935

Date of writing Report 3-9-35 10 When handed in at Local Office 10 Port of Hamburg

No. in Survey held at Hamburg Date, First Survey 6/8/35 Last Survey 6/9/35 19
Reg. Book.

37956 on the Steel Twin Ser. "Eketian" Tons { Gross 1005
Net 506

Built at Hamburg By whom built Howaldtswerke A.G. Yard No. 741 When built 1935

Owners The United Africa Co., Ltd. Port belonging to London

Electric Light Installation fitted by Siemens-Schuckertwerke A.G. Contract No. When fitted 1935

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 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 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 attached hereto 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 port and starb. 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 starb. side port 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 as approved

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

Genrtr: A double pole change-over switch, fuse on each pole. Each outg. circ. - A double pole switch. 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 yes

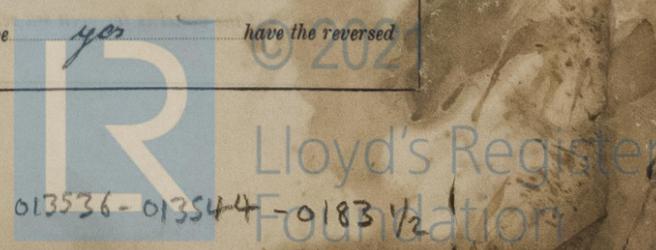
Instruments on main switchboard 2 ammeters 2

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

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



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 *twin* are the cables insulated and protected as per Tables IV, V, X or XI of the Rules *apply*

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

any point of the installation under maximum load *1.2 Catts*

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 *yes*, or waterproof insulating tape *yes*

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 *lead covered*

Support and Protection of Cables, state how the cables are supported and protected *armoured cables supported by clips on deck running in conduit*

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 *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 *water tight 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

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*

Secondary Batteries, are they constructed and fitted as per Rule

Fittings, are all fittings on weather decks, ~~in storerooms~~ 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

are all fittings suitably ventilated , 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 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

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

have machines of over 100 BHP 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 *steel mast*

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

The German Standards have been applied

DESCRIPTION OF GENERATOR.	No. of	RATED AT				DRIVEN BY	WHERE DRIVEN BY AN INTERNAL COMBUSTION ENGINE	
		Kilowatts.	Volts.	Amps.	Revs. per Min.		Fuel Used.	Flash Point of Fuel.
MAIN	2	5 each	115	43.5	900	Aux. Oil Engines	Diesel Oil	175° F
AUXILIARY								
EMERGENCY								
ROTARY TRANSFORMER								

DESCRIPTION.	CONDUCTORS.		COMPOSITION OF STRAND.		TOTAL MAXIMUM CURRENT.		Approximate Length (Lead and Return) Feet.	Insulated with	HOW PROTECTED.
	No. per Pole.	Total Nominal Area per Pole Sq. Ins. %	No.	Diameter %	Circuit.	Rule.			
MAIN GENERATOR	1	16	19	0.64	43.5	49	10 and 20	Rubber	Lead covered and armoured
EQUALISER CONNECTIONS									
AUXILIARY GENERATOR									
EMERGENCY GENERATOR									
ROTARY TRANSFORMER MOTOR GENERATOR									
ENGINE ROOM	1	1.5	1	1.33	5	9.4	max 50		
BOILER ROOM									
AUXILIARY SWITCHBOARDS									
1st aft ship	1	4	19	0.52	14	22.5	28		
2nd fore ship	1	4	19	0.52	14	22.5	100		
Navigation Lamps	1	2.5	19	0.41	5	15.5	113		
ACCOMMODATION									
WIRELESS									
SEARCHLIGHT									
MASTHEAD LIGHT	1	1.5	1	1.33	0.5	9.4	55		
SIDE LIGHTS	1	1.5	1	1.33	0.5	9.4	10		
COMPASS LIGHTS	1	1.5	1	1.33	0.5	9.4	10		
POOP LIGHTS	1	1.5	1	1.33	0.5	9.4	120		
CARGO LIGHTS	1	2.5	19	0.41	4	15.5	50		
ARC LAMPS									
HEATERS									

DESCRIPTION.	No. of Motors.	CONDUCTORS.		COMPOSITION OF STRAND.		TOTAL MAXIMUM CURRENT.		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										
WINCHES, AFT										
STEERING GEAR—										
(a) MOTOR GENERATOR										
(b) MAIN MOTOR										
WORKSHOP MOTOR										
VENTILATING FANS										
Refrig. Machine	1	1	1.5	1	1.33	3.5	9.4	6	Rubber	Lead covered and armoured



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.

SCHUOKERTWERKE

INGENIEURGESELLSCHAFT

HAUPTNIEDERLASSUNG HAMBURG

In Vollmacht

Electrical Engineers.

Date 3.9.1935

COMPASSES.

Distance between electric generators or motors and standard compass 45 m

Distance between electric generators or motors and steering compass 46 m

The nearest cables to the compasses are as follows:—

A cable carrying 0.3 Amperes close to feet from standard compass close to feet from steering compass.

A cable carrying Amperes feet from standard compass feet 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 any course in the case of the standard compass, and nil degrees on any course in the case of the steering compass.

Howaldtswerke A.-G.

Rechen

W. W. W.

Builder's Signature.

Date

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.)

Material and workmanship of this electric installation are of good quality. As the conductors used are of the German Standards the Society's Rules re. conductors have been applied generally. This installation has been fitted in accordance with the approved plans, the Secretary's Letters and otherwise in compliance with the Society's Rules. It has given satisfaction under working conditions and was found in good order.

Noted

L. J.

18/9/35.

Total Capacity of Generators 10. — Kilowatts.

The amount of Fee ... 200. — : When applied for, 12/3/35 19

Travelling Expenses (if any) £ — : When received, 1.1 1936

J. H. W. W.
Surveyor to Lloyd's Register of Shipping.

Committee's Minute

FRI. 4 OCT 1935

Assigned

see J. E. Machy Report



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