

# REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL) 21 AUG 1930

Received at London Office.....

Date of writing Report 20. 8. 1930 When handed in at Local Office 20 Aug. 1930 Port of Hull.

No. in Survey held at Hull. Date, First Survey 22 July Last Survey 18 Aug 1930. (Number of Visits.....)

Reg. Book. on the T.S.S. "LIMPOPO" Tons { Gross 646.89 Net 285.84

Built at Hull By whom built Carlos S.B. & C. La Yard No. 648 When built 1930

Owners Empresa Do Limpopo (A. Couto) Port belonging to Lourenço Marques.

Electric Light Installation fitted by Carlos S.B. & C. La. Contract No. When fitted 1930

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 ✓

Direct or Alternating Current, Lighting Direct current 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

Position of Generators Starboard side of engine room, are they clear of all inflammable material? Yes

is the ventilation in way of the generators satisfactory? Yes, are they 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. Direct coupled.

Main Switch Boards, where placed Beside generator in 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 micanite or other non-hygroscopic insulating material, and the slab similarly insulated from its framework? ✓

and is the frame effectively earthed? Yes. Are the fittings as per Rule regarding:— spacing or shielding of live parts

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. linked

Switch - fuses for generator. Outgoing circuits controlled by D.P. switches, - protected by fuses on each pole.

Instruments on main switchboard One ammeters One 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 lamps, with separate switches

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



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Cables: Single, twin, concentric, or multicore 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 1.5 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 None

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 L.C. cables with brass clips. Armoured cables with G.I. clips.

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, if lights are fitted, are the cables and fittings in accordance with the special requirements None

Joints in Cables, state if any, and how made, insulated, and protected No joints

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 through earth lamps. .003 sq. inch.

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 None

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 None

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 Cut down guards.

are any fittings placed in spaces where inflammable or explosive dust or gases are liable to be present, if so, how are they protected None, how are the cables led

where are the controlling switches situated Yes

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

Arc Lamps, other than searchlight lamps, No. of 1, are their live parts insulated from the frame or case Yes, are their fittings as per Rule Yes

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 Yes and 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

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

PARTICULARS OF GENERATING PLANT.

DESCRIPTION OF GENERATOR.	No of	RATED AT				DRIVEN BY	WHERE DRIVEN BY AN INTERNAL COMBUSTION ENGINE.	
		Kilowatts.	Volts.	Ampères.	Revs. per Min.		Fuel Used.	Flash Point of Fuel.
MAIN	One	4	110	34	450	Steam		
AUXILIARY								
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 Effective Area per Pole Sq. Ins.	No.	Diameter.	In Circuit.	Rate.			
MAIN GENERATOR	2	.0225	7	.064	37	46	12	Rubber.	L.C. Armoured
EQUALISER CONNECTIONS									
AUXILIARY GENERATOR									
EMERGENCY GENERATOR									
ROTARY TRANSFORMER MOTOR GENERATOR									
ENGINE ROOM	2	.003	3	.036	5.75	12.0	6	"	"
BOILER ROOM									
AUXILIARY SWITCHBOARDS navigation	2	.003	3	.036	3.5	12.0	180	"	"
ACCOMMODATION									
Engine room officers	2	.003	3	.036	8.5	12.0	120	"	"
Salon & Forward	2	.0045	7	.029	11.5	18.2	120	"	"
WIRELESS									
SEARCHLIGHT									
MASTHEAD LIGHT	2	.0015	1	.014	.4	6.1	100	"	"
SIDE LIGHTS	2	"	"	"	.4	6.1	17	"	"
COMPASS LIGHTS	2	"	"	"	.2	6.1	8	"	L.C.
POOP LIGHTS									
CARGO LIGHTS									
ARC LAMPS									
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 Effective Area per Pole Sq. Ins.	No.	Diameter.	In Circuit.	Rate.			
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										

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 EARLE'S  
 SHIPBUILDING & ENGINEERING CO. LIMITED,  
*G.H. Stafford* Electrical Engineers. Date \_\_\_\_\_  
 MANAGER

**COMPASSES.**

Distance between electric generators or motors and standard compass 50 Feet.  
 Distance between electric generators or motors and steering compass 60 Feet.  
 The nearest cables to the compasses are as follows:—  
 A cable carrying 4 Ampères 8 feet from standard compass 110 feet from steering compass.  
 A cable carrying \_\_\_\_\_ Ampères \_\_\_\_\_ feet from standard compass \_\_\_\_\_ 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 no degrees on any course in the case of the standard compass, and no degrees on any course in the case of the steering compass.

FOR EARLE'S  
 SHIPBUILDING & ENGINEERING CO. LIMITED,  
*G.H. Stafford* Builder's Signature. Date \_\_\_\_\_  
 MANAGER

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 electrical installation of this vessel has been fitted on board under Special Survey, tried under full working conditions & found good. It is eligible in my opinion to have record of "Electric Light."

It is submitted that  
 this vessel is eligible for  
 THE RECORDS. Elec. Light  
W.H. Waggon  
21/12/30

Total Capacity of Generators 4 Kilowatts.

The amount of Fee ... £ 3 : 0 : 0 When applied for, 20 Aug 30.  
 Travelling Expenses (if any) £ : : 22/8/30 When received, 22/8/30

W. H. Waggon  
 Surveyor to Lloyd's Register of Shipping.  
 for self J.H. Mackay

Committee's Minute FRI. 22 AUG 1930 FRI. 19 DEC 1930

Assigned Elec. Light

Im. 1228.—Transfer. (The Surveyors are requested not to write on or below the space for Committee's Minute.)