

# REPORT ON ELECTRIC FITTINGS

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

19 MAY 1927

Date of writing Report 17<sup>th</sup> May 1927 When handed in at Local Office 18<sup>th</sup> May 1927 Port of Southampton

No. in Survey held at Southampton Date, First Survey 28<sup>th</sup> January 1926 Last Survey 2<sup>nd</sup> May 1927

Reg. Book. on the TWIN M.V. EL BUARO

Built at Woolston, Southampton By whom built Messrs J. I. Thornycroft & Co Yard No. 1062 When built 1921

Owners Anglo-Ecuadorian Oilfields Ltd Port belonging to Guayaquil

Electric Light Installation fitted by Messrs J. I. Thornycroft & Co Ltd Contract No. 1062 When fitted 1921

System of Distribution 2 Wire Insulated

Pressure of supply for Lighting 110 volts, Heating —, 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 overload Yes, are they compound wound No. Shunt wound

are they over compounded 5 per cent. —, 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 and clearly marked Yes, are they so spaced or shielded that they cannot be accidentally earthed, or short circuited 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, 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 axis 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 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

are they constructed wholly of durable, incombustible 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 connected to one pole insulated from the slab with mica or micanite and the slab similarly insulated from its framework —, and is the frame effectively earthed

Are the following fittings as per Rule, viz.: — spacing or shielding of live parts Yes, 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

1: 150 Amp D.P. Generator Switch + Fuses 1. 100 Amp D.P. Switch + Fuses for Power Circuit 3: 10 Amp D.P. Change Over Switches + Fuses to each pole for lighting circuits

Instruments on main switchboard 1: Main Batteries ammeters 1 voltmeter 1 Reville type Auto-cut in & cut out 1 4-way charge & discharge switch synchronising device for paralleling & exposed

Earth Testing, state what means are provided at the main switchboard for indicating the state of the insulation of the system Lamp test

Switches, Circuit Breakers and Fusible Cut-outs, do these comply with the requirements of the Rules. Yes

Section and Distribution Boards, is the construction, protection, insulation, material, and position of these as per rule. Yes



**Insulation of Cables**, state type of cables, single or twin Single are the cables insulated and protected as per Tables III or IV of the Rules. Yes

**Fall of Pressure**, state maximum between bus bars and any point of the installation under maximum load 2 1/2 Volts

**Cable Sockets and other connections**, are the ends of all cables having a sectional area of 0.007 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

**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 By cable clips fixed to Stipes

Structure of plating  
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 VI \_\_\_\_\_

**Refrigerated Chambers**, if lights are fitted, are the cables and fittings in accordance with the special requirements \_\_\_\_\_

**Joints in Cables**, state if any, and how made, insulated, and protected None 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 Positions**, 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 \_\_\_\_\_

**Emergency Supply**, state position and nature of the emergency supply 110 Volt 60 cell 120 Amp  
hour capacity battery at 10 hour rate fitted in Engine Room to supply lighting circuits only when dynamo is shut down. Cells fitted in lead lined tank case with lids suitable vents

**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 \_\_\_\_\_, are separate screens provided for the use of oil and electric side lights Yes  
are separate oil lanterns provided for the mast head lights and side lights 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 \_\_\_\_\_  
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 \_\_\_\_\_

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

**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 axis of rotation fore and aft Winch Motor 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 \_\_\_\_\_

**Control Gear and Resistances**, are the generator field and motor speed regulators, starters and controllers constructed as per Rule Yes

**Lightning Conductors**, where lightning conductors are required, are these fitted as per Rule \_\_\_\_\_

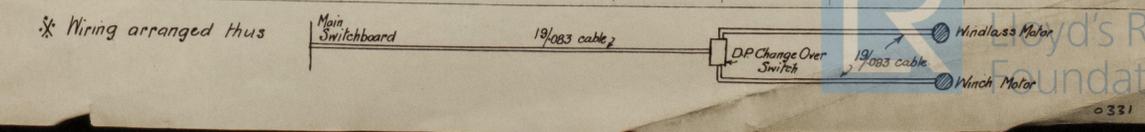
**Ships carrying Oil having a Flash Point less than 150° F.** Have the special requirements of the Rules been complied with regarding switches, joint boxes, section and distribution boards, protection of cables, method of distribution, lead of cables, lights and fittings Yes

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

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	1	14	110/160	120/94		St. Engine	Paraffin	
AUXILIARY	1	20	110/160	120/94	1000	4 St. Eng.	Heavy oil	
EMERGENCY						Fitted 11.38 in lieu of above		
ROTARY TRANSFORMER								

Ref. No.	DESCRIPTION.	No. of Conductors.	Effective Area of each Conductor. Sq. Ins.	COMPOSITION OF STRAND.		Total Maximum Current. Amperes.	Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED.
				No.	Diameter.				
	MAIN GENERATOR	2	.15	37	.072	128	24	Pure Vulcanised India Rubber	Lead based
	AUXILIARY GENERATOR								
	EMERGENCY GENERATOR								
	ROTARY TRANSFORMER								
	AUXILIARY SWITCHBOARDS								
	ENGINE ROOM	2	.003	3	.036	47	48	do	do
	BOILER ROOM								
	WIRELESS		.0045						
	SEARCHLIGHT	2	.0015	7	.029	15	80	Pure Vulcanised India Rubber	Lead based
	MASTHEAD LIGHT	2	.0015	1	.044	.9	190	do	do
	SIDE LIGHTS	2	.0015	1	.044	.9	45	do	do
	COMPASS LIGHTS	2	.0015	1	.044	.28	40	do	do
	POOP LIGHTS								
	CARGO LIGHTS	2	.0015	1	.044	22	190	do	do
	ARC LAMPS								
	HEATERS								

Ref. No.	DESCRIPTION.	No. of Motors.	Effective Area of each Conductor. Sq. Ins.	COMPOSITION OF STRAND.		Total Maximum Current. Amperes.	Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED.
				No.	Diameter.				
	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	1	.10	19	.083	80	220	Pure Vulcanised India Rubber	Lead based
	WINCHES, FORWARD	1	.10	19	.083	66	180	do	do
	WINCHES, AFT								
	STEERING GEAR								
	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.



*Macchie*  
 Electrical Engineers.

Date 20.4.1927

COMPASSES.

Distance between electric generators or motors and standard compass 30 Feet.  
 Distance between electric generators or motors and steering compass —  
 The nearest cables to the compasses are as follows:—  
 A cable carrying 28 Ampères on ~~Y&Y~~ standard compass — 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 — degrees on — course in the case of the standard compass, and — degrees on — course in the case of the steering compass.



*Macchie*  
 Builder's Signature.

Date 20.4.1927

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 under special survey in accordance with the requirements of the Rules, and afterwards tested under full working conditions with satisfactory results. The vessel is eligible in my opinion to have a record of Electric Light*)

It is submitted that this vessel is eligible for THE RECORD. Elec. Light.

*W.D.*  
 19/5/27

Ec. 1245.—Transfer. (The Surveyors are requested not to write on or below the space for Committee's Minute.)

Total Capacity of Generators 14 Kilowatts

The amount of Fee ... £14-0-0  
 Travelling Expenses (if any) £ : :  
 When applied for, 18/5/27  
 When received, 18/5/27

*W.F. Garnett*  
 Surveyor to Lloyd's Register of Shipping.

Committee's Minute FRI, 20 MAY 1927

Assigned *Electric Light*

