

# REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

23 JAN 1928

Received at London Office

Date of writing Report

19

When handed in at Local Office 21<sup>st</sup> Jan 1928 Port of Belfast

No. in Survey held at Belfast

Date, First Survey 19<sup>th</sup> Sept

Last Survey 16 Jan 1928

1928

Reg. Book.

(Number of Visits.....)

No 271 on the Steel S. CHESAPEAKE

Tons { Gross  
Net

Built at Belfast

By whom built Mahman Clark &amp; Co. Ltd. Yard No. 1494 When built 1928

Owners Anglo American Oil Co. Ltd. (Stamilton Ings.) Port belonging to Belfast

Electric Light Installation fitted by Sunderland Engineering Co. Ltd. Contract No. When fitted 1928.

## 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 overload 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

Are all terminals accessible and clearly marked Yes, are they so spaced or shielded that they cannot be accidentally earthed, or short circuited Yes Are the lubricating arrangements of the generators as per Rule Yes

## Position of Generators

In Engine Room

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 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

Engine Room Forward Bulkhead.

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, 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 Yes, and is the frame effectively earthed Yes 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

Generators — Triple Pole C.B.s, 0/L on two poles with time lag, x 3<sup>rd</sup> pole acts as — sn

Outgoing Circuits — Double Pole Q.B. switches x double pole fuses

Instruments on main switchboard 3 ammeters 3 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

Voltmeter reading either +ve or -ve Busbar to earth.

Switches, Circuit Breakers and Fusible Out-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.



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Lloyd's Register  
Foundation

W1647-0018 C12



**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 Ltg 4.5 volts Power 6 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 socket 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. In Accom on Wood Grounds with Brass clips

In Engine Room, Stores & under Fore & Aft Gangways - 3/16" MS. plate with G.I. clips.

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 Yes

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

**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 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 Red Fibre.

**Earthing Connections,** state what earthing connections are fitted and their respective sectional areas Voltmeter Earth Testing Set.

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 Emergency Lrs in E.R. off Machine side of Circuit Breakers.

**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, 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 stakeholds 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.

By solid cast iron fittings with heavy glass bowl fitted outside the spaces. how are the cables led Outside the compartment.

where are the controlling switches situated outside the compartment.

**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 axis 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 —

**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 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 Diesel.	2	40	110	364	380	Semi-Diesel Engine	Waste Oil	above 150° F.
AUXILIARY Steam	1	40	110	364	380	Steam Engine		
EMERGENCY								
ROTARY TRANSFORMER								

## LIGHTING AND HEATING CONDUCTORS.

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... = SR...	2	0.3	37	0.083	364	40	Varn Cambria	LCAB
	AUXILIARY GENERATOR	1	0.1	19	0.083				
	EMERGENCY GENERATOR								
	ROTARY TRANSFORMER...								
	AUXILIARY SWITCHBOARDS								
	ENGINE ROOM	2	0.07	7	0.036	20	35	VIR	LCAB
	Boiler Room								
	Navigation	2	0.225	7	0.064	10.27	560	Varnish Cambria & VIR	LCAB
	Midship & Fore	2	0.6	19	0.064	37.36	512	Varnish Camb	LCAB
	Engineers etc Accom	2	0.07	7	0.036	24	150	VIR	LCAB
	WIRELESS	2	0.225	7	0.064		560	Varnish Cambria & VIR	LCAB
	SEARCHLIGHT								
	MASTHEAD LIGHT	2	0.002	3	0.029	55	340	VIR	LCB & LCAB
	SIDE LIGHTS	2	0.002	3	0.029	55	72	"	LCB
	COMPASS LIGHTS	2	0.002	3	0.029	18	60	"	"
	POOP LIGHTS	2	0.07	7	0.036	24	158	"	LCAB
	CARGO LIGHTS	2	0.002	3	0.029	2.20	90	"	LCAB
	ARC LAMPS								
	HEATERS								

## MOTOR CONDUCTORS.

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	2	2	37	0.083	256	145	Varn. Camb	LCAB
	CIRC. FRESH WATER PUMPS								
	AIR COMPRESSOR								
	FRESH WATER PUMP								
	ENGINE TURNING GEAR	1	0.225	7	0.064	72	200	Varn. Camb	LCAB
	ENGINE REVERSING GEAR								
	LUBRICATING OIL PUMPS	2	0.6	19	0.064	119	150	Varn. Camb	LCAB
	OIL FUEL TRANSFER PUMP	1	0.07	7	0.036	23			
	WINDLASS								
	WINCHES, FORWARD								
	WINCHES, AFT								
	STEERING GEAR	1	12	37	0.064	209	250	Varn. Camb	LCAB
	WORKSHOP MOTOR								
	VENTILATING FANS								
	Refrigerator Motor	1	0.6	19	0.064	96	250	Varnish Camb	LCAB
	Vertical Driller	1	0.07	7	0.036	24.0	74	VIR	"
	Grinder	1	0.07	7	0.036	17	74	VIR	"
	Lathe Motor	1	0.07	7	0.036	17	80	VIR	"
	Wire & Bilge Pump	1	1	19	0.083	176	112	Varn. Cambria	"
	Oil Separator No 1	1	0.07	7	0.036	16.35	28	VIR	"
	" " " " " "	2	0.07	7	0.036	16.35	38	VIR	"
	Galley Blower	1	0.07	7	0.036	2.8	144	VIR	"



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.

The Sunderland Forge & Engineering Co., Ltd.

Electrical Engineers.

Date 12th Jan. 1928.

*Thos. Thompson*

#### COMPASSES.

Distance between electric generators or motors and standard compass 220 feet (approx)

Distance between electric generators or motors and steering compass 220 feet (approx)

The nearest cables to the compasses are as follows:—

A cable carrying 10.27 Ampères 10 feet from standard compass 15 feet from steering compass.

A cable carrying 0.18 Ampères 10 feet from standard compass led into feet from steering compass.

A cable carrying 0.18 Ampères led into feet from standard compass 10 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 courses in the case of the standard compass, and nil degrees on all courses in the case of the steering compass.

PRO WORKMAN, CLARK & CO., LIMITED

*W. A. Stumble*

Builder's Signature. Date 17. 1. 28.

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.)

This installation has been efficiently fitted in the vessel in accordance with the rules, & has been tried out under working conditions with satisfactory results. In my opinion the vessel is eligible for notation "Electric Light"

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

*W.D.* 30/1/28

Total Capacity of Generators 120 Kilowatts

The amount of Fee ... £ 32 : 10 : 12/1/1928

Travelling Expenses (if any) £ : 17/1/1928

*R. Lee Ames*  
Surveyor to Lloyd's Register of Shipping.

Committee's Minute TUES. 31 JAN 1928

Assigned

*Electric Light*