

# REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office

Date of writing Report 12.10.27 When handed in at Local Office 29.10.27 Port of GLASGOW. 2 NOV. 1927

No. in Survey held at GREENOCK. Date, First Survey 7.9.27 Last Survey 14.10.27  
Reg. Book. (Number of Visits 5)

43256 on the S.S. VIRGILIA. Tons { Gross 5723 Net

Built at GREENOCK. By whom built THE GREENOCK DYDOCO Yard No. 411 When built 1927

Owners MRSSES GOW HARRISON & CO. Port belonging to GLASGOW.

Electric Light Installation fitted by THE SUNDERLAND FORGE & ENG CO Contract No. 411 When fitted 1927

System of Distribution DOUBLE WIRE.

Pressure of supply for Lighting 110 volts, Heating —, Power — volts.

Direct or Alternating Current, Lighting DIRECT. 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 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 —, is an adjustable regulating resistance fitted in series with each shunt field —

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 MAIN ENGINE ROOM. STARBOARD.

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 IN MAIN ENGINE ROOM BESIDE MAIN DYNAMO.

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 DOUBLE POLE IRON CLAD.

GAS-TIGHT FUSE-SWITCH FOR MAIN DYNAMO. DOUBLE POLE IRON CLAD GAS TIGHT FUSE SWITCH FOR EACH OUTGOING CIRCUIT.

BUS BARS IN GAS TIGHT CHAMBER.

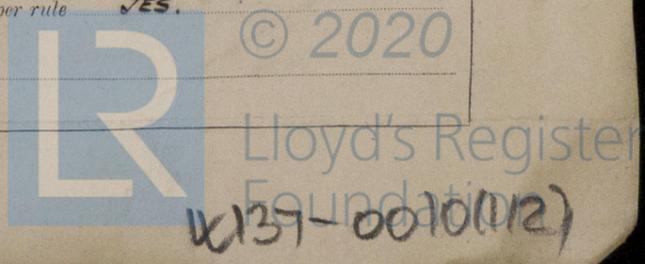
Instruments on main switchboard 1 ammeters 1 voltmeters — synchronising device for paralleling purposes.

Earth Testing, state what means are provided at the main switchboard for indicating the state of the insulation of the system GAS TIGHT EARTH LAMP

FITTING, SWITCH & FUSE ON EACH POLE.

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 & TWIN are the cables insulated and protected as per Tables III or IV of the Rules

**Fall of Pressure**, state maximum between bus bars and any point of the installation under maximum load 4-63

**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

**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 JES

**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 JES

**Support and Protection of Cables**, state how the cables are supported and protected MACHINERY SPACES: LEAD COVERED ARMOURED & BRAIDED SECURED BY GAL. IRON CLIPS. ACCOMMODATION: LEAD COVERED SECURED BY BRASS CLIPS. MAINS: LEAD COVERED RUN IN GAL. N.I. PIPE.

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 JES

**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 WIRE MADE

**Watertight Glands and Deck Tubes**, are all cables passing through decks and watertight bulkheads provided with deck tubes or watertight glands JES

**Bushes in Beams and Non-watertight Positions**, where unarmoured cables pass through beams and non-watertight partitions, are the holes efficiently bushed JES 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 JES

**Emergency Supply**, state position and method of control of the emergency supply and how the generator is driven —

**Navigation Lamps**, are these separately wired JES, controlled by separate switch and separate fuses JES

are the fuses double pole JES, are the switches and fuses grouped in a position accessible only to the officers on watch JES

has each navigation lamp an automatic indicator as per Rule JES, are separate screens provided for the use of oil and electric side lights —

are separate oil lanterns provided for the mast head lights and side lights —

**Fittings**, are all fittings on weather decks, in stokeholds and engine rooms and wherever exposed to drip or condensed moisture, watertight JES

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 GAS-TIGHT FITTINGS.

how are the cables —

IN GAL. N.I. PIPE.

where are the controlling switches situated GAS-TIGHT SWITCHES.

**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 —, are the coils self-contained and readily removable for replacement —

are the brushes, brush holders, terminals and lubricating arrangements as per Rule —, are the motors placed in well-ventilated compartments in which inflammable gases cannot accumulate and clear of all inflammable material —

are they protected from mechanical injury and damage from water, steam or oil —, are their axis of rotation fore and aft —

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 JES

**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 JES

are 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 JES

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

**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	1	15	110	136	320	STEAM ENGINE		
AUXILIARY	—							
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...	2	.14780	37	.072	136	75	V.I.R.	LEAD COVERED ARMOURED & BRAIDED
	AUXILIARY GENERATOR	—							
	EMERGENCY GENERATOR	—							
	ROTARY TRANSFORMER...	—							
	AUXILIARY SWITCHBOARDS	—							
	ENGINE ROOM	2	.00701	7	.036	409	30	V.I.R.	LEAD COVERED ARMOURED & BRAIDED
	BOILER ROOM	2	.06000	19	.064	25.99	448	V.I.R.	LEAD COVERED IN GAL. N.I. PIPE.
	MIDSHIP ACCOMM.	2	.00701	7	.036	4.38	80	V.I.R.	LEAD COVERED ARMOURED & BRAIDED
	ENGINEERS ACCOMM.	2	.00701	7	.036	4.18	464	V.I.R.	LEAD COVERED IN GAL. N.I. PIPE.
	PUMP ROOM	2	.01462	7	.052	6.37	512	V.I.R.	LEAD COVERED IN GAL. N.I. PIPE.
	NAVIGATION	2	.01462	7	.052	6.37	512	V.I.R.	LEAD COVERED IN GAL. N.I. PIPE.
	WIRELESS	2	.01462	7	.052	13.7	482	V.I.R.	LEAD COVERED IN GAL. N.I. PIPE.
	SEARCHLIGHT	2	.00194	3	.029	.9	432	V.I.R.	LEAD COVERED IN GAL. N.I. PIPE.
	MASTHEAD LIGHT...	2	.00194	3	.029	.9	95	V.I.R.	LEAD COVERED
	SIDE LIGHTS	2	.00194	3	.029	.2	24	V.I.R.	LEAD COVERED
	COMPASS LIGHTS	2	.01046	7	.044	7.2	336	V.I.R.	LEAD COVERED IN GAL. N.I. PIPE.
	POOP LIGHTS	—							
	CARGO LIGHTS	—							
	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								
	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								
	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.

BY THE SUNDERLAND FORGE & ENGINEERING CO. LTD.

*J. Thompson*

Electrical Engineers.

Date 18. 10. 27.

COMPASSES.

Distance between electric generators or motors and standard compass 191 FEET.

Distance between electric generators or motors and steering compass 200 FEET.

The nearest cables to the compasses are as follows:—

A cable carrying 6.37 Ampères 14 feet from standard compass 24 feet from steering compass.

A cable carrying .2 Ampères 12 feet from standard compass LED INTO feet from steering compass.

A cable carrying .2 Ampères LED INTO feet from standard compass 12 feet from steering compass.

Have the compasses been adjusted with and without the electric installation at work at full power 4/10

Has the effect of switching on and off circuits, motors and other electro-magnetic apparatus within the vicinity of the compasses been noted 4/10

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.

THE GREENOCK DOCKYARD CO. LTD.

*J. Turnbull*

Builder's Signature.

Date 28/10/27

DIRECTOR.

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 fitted on board under special survey. Tested under full working conditions & found satisfactory.*

*The installation has been carried out in complete gas tight principals Generator, Switchboard, distribution boxes & fittings all being totally encased in cast iron watertight casings.*

*The workmanship was found to be good & sound.*

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

*J. Rankin*  
2/11/27

Total Capacity of Generators 15 Kilowatts

The amount of Fee ... £ 15.0.0

When applied for, @ GPK

Travelling Expenses (if any) £ 10.6

When received, 26.10.27. hand.

*J. Rankin*  
Surveyor to Lloyd's Register of Shipping.

Committee's Minute GLASGOW 1- NOV 1927

Assigned Elec. Light.

In 9.24.—Transfer. (The Surveyors are requested not to write on or below the space for Committee's Minute.)



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