

REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

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No. in Survey held at DARTMOUTH Date, First Survey 5. 11. 24 Last Survey 21. 1. 1925.
Reg. Book 90406 Sup. on the s.s. "SUNFLOWER" (Number of Visits 7)Built at Dartmouth By whom built Philip Son. Yard No. 640. When built 1925.
Owners Vacuum Oil Co Ltd. Port belonging to Lisbon

Electric Light Installation fitted by Philip & Son Contract No. When fitted 1925.

System of Distribution Two wire D.C. ✓

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

Direct or Alternating Current, Lighting D.C. ✓ 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 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 On elevated platform after end starboard side of 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 Behind generator - well clear.

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.

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 1 double pole

linked switch with double pole fuses for generator and 1 double pole linked

switch with double pole fuses for each outgoing circuit

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 Two earth lamps

in series across poles, with an earth connection and switch between the two.

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.



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Foundation

Insulation of Cables, state type of cables, single or twin *Both - See General Remarks.* 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 *nil*

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 *Yes.*

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 *Cables held by clips. In exposed parts carried through iron tubes.*

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 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 *none. All jointing in W.T. 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 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 *Earthing connection for earth lamps 00299 sq. in. Earth connection for lightning conductor 155 sq. in.* 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 supply is in the engine room.*

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 *no.*

are separate oil lanterns provided for the mast head lights and side lights *Yes.*

Fittings, are all fittings on weather decks, in storeholds and engine rooms and wherever exposed to drip or condensation moisture, water tight *Yes.* are any fittings placed in spaces in which goods are liable to be stacked in close proximity to them *no.* 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 *lamp room fittings are as per Rule for vessels carrying petroleum in bulk.* how are the cables led *through gas tight tubes, screwed into fittings*

where are the controlling switches situated *Top of Storehold fiddle.*

Searchlight Lamps, No. of *none*, whether fixed or portable *Yes.* are their fittings as per Rule *Yes.*

Arc Lamps, other than searchlight lamps, No. of *none*, 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 *none*, 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 *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 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 - except as stated in General Remarks.*

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	1/2	110	68	350	Single cylinder open type steam engine 6" dia x 5" stroke	✓	✓
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	06	✓	19	064	18	48 ft.	V.I.R. lead covered & in iron tube
	AUXILIARY GENERATOR								
	EMERGENCY GENERATOR								
	ROTARY TRANSFORMER...								
	AUXILIARY SWITCHBOARDS								
	ENGINE ROOM Dist. box	2	00299	✓	3	036	2.4	60	do. lead covered
	BOILER ROOM lights	2	00194	✓	3	029	1.0	140	do. do.
	Engine room lights	2	00299	✓	3	036	1.7		do. do.
	To Forward Dist. box	2	0045	✓	7	029	2.0	320	do. do. & in galvanised iron tube lead covered
	To Aft Accommodation & deck lighting dist. box	4	00299	✓	3	036	5.4		do. do.
	Arm dist. box & lamp	2	0045	✓	3	029			do. lead covered
	WIRELESS								
	SEARCHLIGHT								
	MASTHEAD LIGHT...	2	00194	✓	3	029	35	170	do. lead covered & in iron tube
	SIDE LIGHTS... each	2	00194	✓	3	029	35	22	do. lead covered
	COMPASS LIGHTS								
	Deck LIGHTS	2	00194	✓	3	029	35	50	do. lead covered
	CARGO LIGHTS Two	2					1.0 each		do. Cab type electric flex.
	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.

FOR PHILIP & SON, LIMITED.

Electrical Engineers.

Date Feb 9/1925

COMPASSES.

Distance between electric generators or motors and standard compass 54 ft.

Distance between electric generators or motors and steering compass 56 ft.

The nearest cables to the compasses are as follows:—

A cable carrying 2 Ampères 6 feet from standard compass 3 feet from steering compass.

A cable carrying 2 Ampères 5 feet from standard compass 5 feet from steering compass.

A cable carrying 1 Ampères 1 feet from standard compass 1 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 each course in the case of the standard compass, and Nil degrees on each course in the case of the steering compass.

FOR PHILIP & SON, LIMITED.

Builder's Signature.

Date Feb 9/1925

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 installation of electric lighting into this vessel has been carried out under special survey and is in accordance with the Rules for vessels carrying Petroleum in Bulk except in so far as modification to wiring which was approved by Secretary's letter E of 15th September 1924 addressed to Messrs Flannery, Bagallay & Johnson Ltd.

The materials and workmanship are good and the installation was tested with satisfactory results under working conditions. The installation is, in my opinion, suitable for a vessel classed with this Society.

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

Total Capacity of Generators 4.5 Kilowatts

The amount of Fee ... £ 4-10-0

Travelling Expenses (if any) £ 0

Committee's Minute

Assigned

Surveyor to Lloyd's Register of Shipping.