

# REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office TUE. 4 NOV. 1923

Date of writing Report \_\_\_\_\_ When handed in at Local Office 5/11/23 Port of NEWCASTLE-ON-TYNE

No. in Survey held at Newcastle-on-Tyne Date, First Survey 4 May 1922 Last Survey 18 October 1923  
Reg. Book 13533 on the Donus Tons { Gross 4200  
Net 2560

Built at Newcastle By whom built Swan Hunter & Wigham Richardson Yard No. 1122 When built 1922

Owners Philippine Tobacco Co Port belonging to Barcelona

Electric Light Installation fitted by Swan Hunter & Wigham Richardson Contract No. 1122 When fitted 1923

System of Distribution Two wire system ✓  
Pressure of supply for Lighting 110 ✓ volts, Heating \_\_\_\_\_ volts, Power 220 ✓ 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. yes ✓, if not compound wound state distance between each generator 8 feet ✓

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 aft end 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 after end of 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, 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 lighting circuits ✓

Double switch fuses on main cables & on all outgoing circuits

Instruments on main switchboard \_\_\_\_\_ ammeters \_\_\_\_\_ 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 ✓

coupled to earth through fuses & switches

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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Lloyd's Register Foundation

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**Insulation of Cables**, state type of cables, single or twin *singletwines* 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 *3.75*

**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 *lead covered & armoured cables clipped to steel trays*

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 \_\_\_\_\_

**Joints in Cables**, state if any, and how made, insulated, and protected *home 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 *yes*

**Emergency Supply**, state position and method of control of the emergency supply and how the generator is driven *Hot bunk oil engine in 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 *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 *yes. protected by stout glass globes & metal guards in galvanised iron pipe.*

where are the controlling switches situated *outside under midship accommodation*

**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 (POWER)	3	55	220	250		1. Steam engine 2. Oil engine		
AUXILIARY	1	8	110	73		oil 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 (2 in No)	2	.4064	61	.093	250	100 each	rubber	lead varnished
	AUXILIARY GENERATOR	2	.4064	61	.093	250	100	rubber	50
	EMERGENCY GENERATOR	2	.1009	19	.083	73	80	rubber	50
	ROTARY TRANSFORMER								
	AUXILIARY SWITCHBOARDS								
	ENGINE ROOM								
	BOILER ROOM	2	.00701	7	.036	18	40	rubber	lead varnished
	MOTOR GENERATOR	2	.1009	19	.083	109	20	rubber	50
	Engineers Acc <sup>y</sup>	2	.02214	7	.064	36	105	rubber	lead
	Midships	2	.01046	7	.044	21.6	540	rubber	lead.
	WIRELESS	2	.02214	7	.064	15.0	600	rubber	lead
	SEARCHLIGHT								
	MASTHEAD LIGHT	2	.00152	1	.044	1.12	450	rubber	lead
	SIDE LIGHTS	2	.00152	1	.044	1.12	30	rubber	lead
	COMPASS LIGHTS	2	.00152	1	.044	1.28	105	rubber	lead
	Deck LIGHTS	2	.00152	1	.044	1.12	400	rubber	lead.
	CARGO LIGHTS	2	.003	70	.0076	3.0	120	rubber	flexible.
	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	1	.1009	19	.083	105	100	rubber	
	MAIN BILGE LINE PUMPS	1	.0396	19	.052	35	100	rubber	
	GENERAL SERVICE PUMP	1	.0396	19	.052	35	130	rubber	
	EMERGENCY BILGE PUMP								
	SANITARY PUMP								
	CIRC. SEA WATER PUMPS	2	.1009	19	.083	74.8	200+160	rubber	
	CIRC. FRESH WATER PUMPS								
	AIR COMPRESSOR								
	FRESH WATER PUMP								
	ENGINE TURNING GEAR								
	ENGINE REVERSING GEAR								
	LUBRICATING OIL PUMPS	2	.00701	7	.036	18.4	50	rubber	
	OIL FUEL TRANSFER PUMP	1	.00701	7	.036	15.0	240	rubber	
	WINDLASS	1	.00701	7	.036	15.0	210	rubber	
	WINCHES, FORWARD								
	WINCHES, AFT								
	STEERING GEAR	1	.0396	19	.052	45	100	rubber	lead coat var m <sup>d</sup>
	WORKSHOP MOTOR	1	.00701	7	.036	23	120	rubber	50
	VENTILATING FANS	2	.00455	7	.029	6	200	rubber	50
	Aux. and Compressor	1	.1964	37	.083	153	205	rubber	50
	De Laval Oil pump	1	.00299	3	.036	8	160	rubber	50
	Electric Motor	1	.00455	7	.052	30	50	rubber	50

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 SWAN, HUNTER, & WIGHAM RICHARDSON, LTD. Electrical Engineers. Date 16<sup>th</sup> October 1923.

COMPASSES.

Distance between electric generators or motors and standard compass 260 feet  
 Distance between electric generators or motors and steering compass 260 feet.  
 The nearest cables to the compasses are as follows :—  
 A cable carrying .3 Ampères 10 feet from standard compass 10 feet from steering compass.  
 A cable carrying 5.4 Ampères 15 feet from standard compass 15 feet from steering compass.  
 A cable carrying 9.0 Ampères 25 feet from standard compass 25 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  
 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 SWAN, HUNTER & WIGHAM RICHARDSON, LTD.

*G. J. Sweet* Builder's Signature. Date 3 November 1923.  
 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.)

*The above installation is in accordance with the Society's Rules  
 The vessel is eligible in my opinion for notation elec light, which*

*It is submitted that  
 this vessel is eligible for  
 NOTATION. Elec Light.  
 W.T. 8/11/23.*

Total Capacity of Generators *172* Kilowatts

The amount of Fee ... £ 35 : 2 : *3/10/23*  
 Travelling Expenses (if any) : £ : *11/0/23*

*W.T. Badger*  
 Surveyor to Lloyd's Register of Shipping.

Committee's Minute

Assigned

Im 3.22.—Transfer.  
 (The Surveyors are requested not to write on or below the space for Committee's Minute.)