

# REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Date of writing Report 22-12-1931. When handed in at Local Office 18-1-1932 Port of GLASGOW. Received at London Office 29 JAN 1932

No. in Survey held at TROON. Date, First Survey 23<sup>rd</sup> Dec Last Survey 27<sup>th</sup> Dec 1931. (Number of Visits.....)

Reg. Book. 42470 on the S.S. 'THE SULTAN' Tons { Gross 824 Net 405

Built at TROON. By whom built AILSA SHIPBUILDING CO. LTD. Yard No. 418 When built 1931

Owners J. HAY & SONS LTD. Port belonging to GLASGOW.

Electric Light Installation fitted by CLAUD. HAMILTON LTD. Contract No. 418 When fitted 1931

Is the Vessel fitted for carrying Petroleum in bulk No.

System of Distribution D.P. Distributing fuse box, two wire system. ✓

Pressure of supply for Lighting 110 volts, Heating none volts, Power none 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 rating 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 only one ✓, is an adjustable regulating resistance fitted in series with each shunt field yes ✓

Are all terminals accessible, clearly marked, and furnished with sockets yes ✓, are they so spaced or shielded that they cannot be accidentally earthed, short circuited, or touched yes ✓

Position of Generators Engine Room (bottom platform,)

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 axes 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 adjacent to generator. ✓

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 Some convenient

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, non-ignitable 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 insulated from the slab with mica or micaite or other non-hygroscopic insulating material, and the slab similarly insulated from its framework yes ✓

and is the frame effectively earthed yes ✓, Are the fittings as per Rule regarding: - 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 D.P. main switch and fuses for generator and S.P. switches and D.P. fuses for each out going circuit. ✓

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 earth lamps ✓

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

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



**Cables:** Single, twin, concentric, or multicore <sup>main twin</sup> are the cables insulated and protected as per Tables IV or V of the Rules <sup>branch wiring single</sup> **Yes** (S.3 Rule Max)

**Fall of Pressure,** state maximum between bus bars and any point of the installation under maximum load **2.5 Volts** **Yes**

**Cable Sockets and other connections,** are the ends of all cables having a sectional area of 0.04 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 **none**

**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 in tubing and lead covered on surface** **Yes**

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 VIII **Yes**

**Refrigerated Chambers,** if lights are fitted, are the cables and fittings in accordance with the special requirements **none**

**Joints in Cables,** state if any, and how made, insulated, and protected **no joints** **Yes**

**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 Partitions,** 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 **none**

**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**

**Secondary Batteries,** are they constructed and fitted as per Rule **none**

**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 **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 **no**, how are the cables led **-**, where are the controlling switches situated **-**

**Searchlight Lamps,** No. of **none**, 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 **none**, 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 axes 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 and fitted 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 **-**, If portable lamps for use in dangerous spaces are supplied, are they of a type approved by the Home Office **-**

**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	3	110	28	350	direct coupled to Rotary open type Steam engine	-	-
AUXILIARY ...								
EMERGENCY ...								
ROTARY TRANSFORMER								

**GENERATOR, LIGHTING AND HEATING CONDUCTORS.**

DESCRIPTION.	CONDUCTORS.		COMPOSITION OF STRAND.		TOTAL MAXIMUM CURRENT AMPERES.		Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED.
	No. per Pole.	Total Effective Area per Pole Sq. Ins.	No.	Diameter.	In Circuit.	Rule.			
MAIN GENERATOR ...	1	.01	4	.044	28	31	12	Lead covered	in Tubing
EQUALISER CONNECTIONS ...	-	-	-	-	-	-	-		
AUXILIARY GENERATOR ...	-	-	-	-	-	-	-		
EMERGENCY GENERATOR ...	-	-	-	-	-	-	-		
ROTARY TRANSFORMER MOTOR GENERATOR ...	1	.002	3	.029	4.5	9.8	3	" "	" "
ENGINE ROOM ...	1	.002	3	.029	4.5	9.8	3	" "	" "
BOILER ROOM ...	1	.002	3	.029	4.5	9.8	3	" "	" "
AUXILIARY SWITCHBOARDS ...	-	-	-	-	-	-	-		
ACCOMMODATION officers ...	1	.003	3	.036	6	12	210	" "	" "
" Engineers navigation ...	1	.003	3	.036	3	12	50	" "	" "
" navigation ...	2	.002	3	.029	4	9.8	220	" "	" "
WIRELESS ...	-	-	-	-	-	-	-		
SEARCHLIGHT ...	-	-	-	-	-	-	-		
MASTHEAD LIGHT ...	1	.002	3	.029	4	9.8	130	" "	" "
SIDE LIGHTS ... (2)	1	.002	3	.029	4	9.8	70	Lead covered only	" "
COMPASS LIGHTS ... (2)	1	.002	3	.029	3	9.8	60	" "	" "
POOP LIGHTS ...	-	-	-	-	-	-	-		
CARGO LIGHTS ...	-	-	-	-	-	-	-		
ARC LAMPS ...	-	-	-	-	-	-	-		
HEATERS ...	-	-	-	-	-	-	-		

**MOTOR CONDUCTORS.**

DESCRIPTION.	No. of Motors.	CONDUCTORS.		COMPOSITION OF STRAND.		TOTAL MAXIMUM CURRENT AMPERES.		Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED.
		No. per Pole.	Total Effective Area per Pole Sq. Ins.	No.	Diameter.	In Circuit.	Rule.			
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—										
(a) MOTOR GENERATOR ...										
(b) MAIN MOTOR ...										
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 **CLAUD HAMILTON, LIMITED**

*Wm. Lawrence*  
 MANAGER

Electrical Engineers.

Date 31st Dec 31

COMPASSES.

Distance between electric generators or motors and standard compass 88

Distance between electric generators or motors and steering compass 80

The nearest cables to the compasses are as follows:—

A cable carrying 6 Ampères 12 feet from standard compass 10 feet from steering compass.

A cable carrying 1 Ampères 10 feet from standard compass 10 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 no degrees on any course in the case of the standard

compass, and 6 degrees on any course in the case of the steering compass.

**AILSA SHIPBUILDING CO., LIMITED.**

*Wm. Lawrence*  
 General Manager.

Builder's Signature.

Date 13-1-32.

Is this installation a duplicate of a previous case  If so, state name of vessel \_\_\_\_\_

General Remarks (State quality of workmanship, opinions as to class, etc.)

*This installation has been fitted on board under special survey, tested under full working conditions and found satisfactory. The materials and workmanship were found to be good and sound.*

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

*Wm. Lawrence*  
 26.1.32.

Total Capacity of Generators 3 Kilowatts.

The amount of Fee ... £ 5 : 0 : 0 5. 1. 1932

Travelling Expenses (if any) £ : 10/6 : 8 1. 1932

*H. Haffner*  
 Surveyor Lloyd's Register of Shipping.

Committee's Minute **GLASGOW 19 JAN 1932**

Assigned Elec. Light



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Lloyd's Register  
 Foundation

*Wm. Lawrence*  
 26.1.32.

*A.G.*  
 16/1/32.

Im. 9. 90.—Transfer. (The Surveyors are requested not to write on or betw the spars for Committee's Minutes.)