

# REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office..... 13 NOV 1924

Date of writing Report 6. 11. 1924 When handed in at Local Office 17. 11. 1924 Port of GLASGOW.

No. in Survey held at GOVAN. Date, First Survey 24. 10. 24 Last Survey 5. 11. 1924  
 Reg. Book. on the S.S. Red Line No 4 s/s Redline no 1 (Number of Visits.....)

Tons { Gross 271.89  
 Net 119.86

Built at GOVAN. By whom built HARLAND & WOLFF LTD Yard No. 698. When built 1924.

Owners MESSRS A. WEIR & CO. Port belonging to LONDON

Electric Light Installation fitted by MESSRS HARLAND & WOLFF LTD Contract No. 698. When fitted 1924.

System of Distribution Two wire

Pressure of supply for Lighting 105 volts, Heating — volts, 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 one dynamo, 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.

Position of Generators Engine Rm. aft Starboard side. Are the lubricating arrangements of the generators as per Rule Yes

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 ledplates 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 Rm. aft.

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 micamite 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 D.P. Main Switch & Fuse for Dynamo. & 3 D.P. switches & Fuses for 3 outgoing circuits

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 Two lamps and two linked D.P. switches across mains, mid point of lamps earthed

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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**Insulation of Cables**, state type of cables, single or twin *both* 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 *2.5 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 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 used*

**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 *Clipped to wood Bhd or Run in sheet iron troughing along Deck. where exposed to heat & LSAB. L.C. elsewhere*

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 *In special joint Box*

**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 *All metal fittings and the lampholders when a fitting is on a wood block, earthed with #036 wire. also portable lamps. with #036 wire.* 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 *—*

**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 *one screen*

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 *—*

where are the controlling switches situated *—*

**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 *—*

**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 *—*

PARTICULARS OF GENERATING PLANT.

DESCRIPTION OF GENERATOR.	No of	RATED AT			DRIVEN BY.	WHERE DRIVEN BY AN INTERNAL COMBUSTION ENGINE.	
		Kilowatts.	Volts.	Amperes.		Revs. per Min.	Fuel Used.
MAIN	1	3	105	28.5	400	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	1/4 hole	.01	4	.044	28.5	10	Rubber	LSAB
	AUXILIARY GENERATOR	—	—	—	—	—	—	—	—
	EMERGENCY GENERATOR	—	—	—	—	—	—	—	—
	ROTARY TRANSFORMER	—	—	—	—	—	—	—	—
	AUXILIARY SWITCHBOARDS	—	—	—	—	—	—	—	—
	ENGINE ROOM	1	.003	3	.036	3.9	10	Rubber	LSAB.
	BOILER ROOM	—	—	—	—	—	—	—	—
	WIRELESS	—	—	—	—	—	—	—	—
	SEARCHLIGHT	—	—	—	—	—	—	—	—
	MASTHEAD LIGHT	1/4 hole	.003	3	.036	.6	66	Rubber	LSAB.
	SIDE LIGHTS	"	.003	3	.036	.6	40	"	LS.
	COMPASS LIGHTS	"	.003	3	.036	.3	15	"	L.C.
	POOP LIGHTS	"	.003	3	.036	.6	210	"	LSAB.
	CARGO LIGHTS	"	.003	3	.036	3.6	30	"	LSAB.
	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 HARLAND AND WOLFF, LIMITED,

*John Dickenson*

Electrical Engineers.

Date 13th Nov 1924

Managing Director.

COMPASSES.

Distance between electric generators or motors and standard compass

90 ft.

Distance between electric generators or motors and steering compass

90 ft.

The nearest cables to the compasses are as follows:—

A cable carrying 8.1 Ampères 6 feet from standard compass 6 feet from steering compass.

A cable carrying 1.8 Ampères 6 feet from standard compass 6 feet from steering compass.

A cable carrying 1.2 Ampères 6 feet from standard compass 6 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 the course in the case of the standard compass, and Nil degrees on all the course in the case of the steering compass.

For HARLAND AND WOLFF, LIMITED,

*John Dickenson*

Builder's Signature.

Date 13th Nov 1924

Managing 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 and found satisfactory. The workmanship was found to be good and sound.

THE RECORD. Elec. Light. J.P.A. 19/11/24

Total Capacity of Generators 5 Kilowatts

The amount of Fee ... £ 5.0.0. When applied for, 11/11/24

Travelling Expenses (if any) £ : : When received, credit book.

Committee's Minute GLASGOW 18 NOV 1924

Assigned Elec. Light

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