

Rpt. 13.

No. 44375

# REPORT ON ELECTRIC FITTINGS

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office.....

Date of writing Report 9-2-1925 When handed in at Local Office 2.3.1925 Port of Glasgow.

No. in Survey held at Glasgow Date, First Survey 23.12.24 Last Survey 5.2.1925  
Reg. Book. 88841 on the R. S. Hendrie (Number of Visits.....)

Tons { Gross 1309  
Net 754

Built at Glasgow By whom built Messrs R. J. Inglis Yard No. 689 When built 1925.

Owners Messrs J. P. Hutchison Ltd. Port belonging to Glasgow.

Electric Light Installation fitted by Messrs Harland & Wolff Ltd (Govan) Contract No. 689 When fitted 1925.

System of Distribution Two wire ✓

Pressure of supply for Lighting 110 ✓ 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 - , 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 Engine Room, port side.

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 Engine Room, port side near 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 - , 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 and Fuses for Dynamo and 5 D. P. Switches and Fuses for the 5 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 D. P. Switches across busbars, 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 *4.4 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, clipped direct to wood bulkheads beams and bulkheads. L.S.A.B. Cable in Engine Room and Cargo spaces. L.C. Cable elsewhere*

**Support and Protection of Cables**, state how the cables are supported and protected *where cables come through cargo spaces they are run in girders and in protected positions in Engine Room and 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 a 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 *-*

*-*, 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 *-*

**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 *in chart room*

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 *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 *-*, whether fixed or portable *-*, are their fittings as per Rule *-*

**Are 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 *-*

**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	5	110	45.5	345	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.				
1	MAIN GENERATOR...	1 pair	.0225	4	.064	45.5	10	Rubber	Lead Covered
-	AUXILIARY GENERATOR								
-	EMERGENCY GENERATOR								
-	ROTARY TRANSFORMER...								
-	AUXILIARY SWITCHBOARDS								
-	ENGINE ROOM	1 pair	.0030	3	.036	6.6	5	Rubber	Lead covered
-	BOILER ROOM								Armoured and Braided.
-	Navigation	1 pair	.0040	4	.036	7.4	300	"	"
-	Deck Lighting	1 "	.0030	3	.036	4.4	490	"	"
-	Aft	1 "	.0030	3	.036	8.6	56	"	"
-	Large "	1 "	.0040	4	.036	20.0	300	"	"
-	WIRELESS								
-	SEARCHLIGHT								
-	MASTHEAD LIGHT...	1 pair	.0030	3	.036	.55	232	Rubber	L.C. a & B Braided
-	SIDE LIGHTS	1 pair	.0030	3	.036	.55	72	"	Lead covered
-	COMPASS LIGHTS	1 pair	.0030	3	.036	.3	30	"	"
-	POOP LIGHTS								
6	CARGO LIGHTS	each 1 pair	.0030	3	.036	3.3	190	"	L.C. a & B Braided.
-	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 ...								



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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 Dickinson

Managing Director

Electrical Engineers.

Date 25th Feb 1925

#### COMPASSES.

Distance between electric generators or motors and standard compass 30 ft.

Distance between electric generators or motors and steering compass 105 ft.

The nearest cables to the compasses are as follows :—

A cable carrying 20 Ampères 18 feet from standard compass 10 feet from steering compass.

A cable carrying 8.6 Ampères 18 feet from standard compass 10 feet from steering compass.

A cable carrying 1.5 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 Dickinson

Builder's Signature.

Date 25th Feb 1925

Managing Director

Is this installation a duplicate of a previous case yes. If so, state name of vessel S.S. Procris.

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.

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

J. S. Rankin  
4/3/25

Total Capacity of Generators 5. Kilowatts

The amount of Fee ... £ 50.00 : 9.2.25

Travelling Expenses (if any) £ : 28.2.25

J. S. Rankin

Surveyor to Lloyd's Register of Shipping.

Committee's Minute GLASGOW 3-MAR 1925

Assigned

Elec. Light



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