

Rpt. 13.

No. 48080

# REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

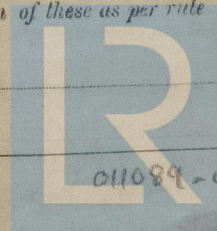
Received at London Office.....

Date of writing Report 28.5.1928 When handed in at Local Office 22.6.1928 Port of GLASGOW.No. in Survey held at GLASGOW.  
Reg. Book.Date, First Survey 4.6.28 Last Survey 29.6.1928  
(Number of Visits.....)40567 on the DELFINA MITRE.Tons {  
Gross  
NetBuilt at GLASGOW. By whom built Messrs R & J. INGLIS LTD Yard No. 815 When built 1928Owners ENTRE RIOS RAILWAY CO LTD Port belonging to IBICUY.Electric Light Installation fitted by Messrs HARLAND & WOLFF LTD Contract No. 815 When fitted 1928  
(GOVAN)

## System of Distribution

Two wire -Pressure of supply for Lighting 220 - 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 rating yes -, are they compound wound yes -are they over compounded 5 per cent. yes -, if not compound wound state distance between each generatorWhere more than one generator is fitted are they arranged to run in parallel yes -, is an adjustable regulating resistance fitted inseries 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 - Are the lubricating arrangements of the generators as per Rule yes -Position of Generators at forward end of main motor room -, are they clear of all inflammable material yes -is the ventilation in way of the generators satisfactory 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 andtheir respective generators in metallic contact yes -Main Switch Boards, where placed Forward end of main motor room, starboard side.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 unprotectedwoodwork 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 ofpermanently high insulation resistance yes -, if semi-insulating material is used, are all conducting parts insulated from the slabwith mica or micanite 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 partsyes -, accessibility of all parts yes -, absence of fuses on back of board yes -, proportion of omnibusbars 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. CircuitBreaker interlocked with D. P. Equalising switch for each generator and D. P. Switch & Fuses for each outgoing circuit.Instruments on main switchboard two - ammeters two - 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-wayswitch and voltmeter.Switches, Circuit Breakers and Fusible Cut-outs, do these comply with the requirements of the Rules yes -Joint Boxes 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

011089-011098-00651/2



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Cables: Single, twin, ~~conductor~~ or multicore *both* are the cables insulated and protected as per Tables IV or V of the Rules. *yes*  
Fall of Pressure, state maximum between bus bars and any point of the installation under maximum load  
Cable Sockets and other connections, are the ends of all cables having a sectional area of 0.01 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 cables, secured by brass clips throughout, except on engine platforms where L.C. & V.B. cables are fitted.*  
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 *yes*. 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  
Joints in Cables, state if any, and how made, insulated, and protected *none*  
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, in Pilot House*  
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 *yes, watertight, bulkhead type fittings with guards.*  
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 *1*, whether fixed or portable *portable*, are their fittings as per Rule  
Arc Lamps, other than searchlight lamps, No. of *1*, are their live parts insulated from the frame or case *yes*, 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 axes 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*  
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  
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	2	55	220	250	400	Diesel Engine	Dist. Mox.	150° F.	
AUXILIARY									
EMERGENCY									
ROTARY TRANSFORMER					Nominal				
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	120	34	.064	250	146	Rubber	Lead Cased
	EQUALISER CONNECTIONS	2	120	34	.064	250	146	Rubber	Lead Cased
	AUXILIARY GENERATOR								
	EMERGENCY GENERATOR								
	ROTARY TRANSFORMER...								
	AUXILIARY SWITCHBOARDS								
	ENGINE ROOM	2	.0070	4	.036	8.5	20	"	"
	BOILER ROOM	2	.0045	4	.029	14.8	160	"	"
	ACCOMMODATION	2	.0045	4	.029	8.0	260	"	"
	Navigation	2	.0045	4	.029	8.0	260	"	"
	WIRELESS								
	SEARCHLIGHT	2	.0030	3	.036	4.5	20	Rubber	Lead Cased
	MASTHEAD LIGHT...	2	.0020	3	.029	.24	70	"	Lead Cased in Contin.
	SIDE LIGHTS	2	.0020	3	.029	.24	64	"	Lead Cased
	COMPASS LIGHTS	2	.0020	3	.029	.14	30	"	"
	POOP LIGHT (Stem)	2	.0020	3	.029	.24	592	"	"
	CARGO LIGHTS								
	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	1	.0030	3	.036	11	62	Rubber	Lead Cased.
	GENERAL SERVICE PUMP	1	.0400	19	.052	48	66	"	"
	EMERGENCY BILGE PUMP								
	SANITARY PUMP								
	CIRC. SEA WATER PUMPS	2	.0100	4	.044	29	60	"	"
	CIRC. FRESH WATER PUMPS								
	AIR COMPRESSOR								
	FRESH WATER PUMP	1	.0030	3	.036	4	130	"	"
	ENGINE TURNING GEAR	2	.0045	4	.029	14	74	"	"
	ENGINE REVERSING GEAR								
	LUBRICATING OIL PUMPS	2	.0145	4	.052	33	64	"	"
	OIL FUEL TRANSFER PUMP	1	.0030	3	.036	6	30	"	"
	WINDLASS	1	.1000	19	.083	145	360	"	"
	WINCHES, FORWARD								
	WINCHES, AFT								
	STEERING GEAR								
	(a) MOTOR GENERATOR								
	(b) MAIN MOTOR	1	.0225	4	.064	50	430	"	"
	WORKSHOP MOTOR								
	VENTILATING FANS								
	Lathe	1	.0030	3	.036	6	80	"	"
	Drill	1	.0030	3	.036	8	86	"	"
	Oil Purifier	1	.0030	3	.036	9	16	"	"
	Capstan	1	.0400	19	.052	46	440	"	"



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 & WOLFF, LTD  
*John Dickenson*  
Managing Director

Electrical Engineers.

Date

#### COMPASSES.

Distance between electric generators or motors and standard compass

*none fitted*  
*80 ft.*

Distance between electric generators or motors and steering compass

The nearest cables to the compasses are as follows:—

A cable carrying *12.6* Ampères feet from standard compass *6* feet from steering compass.

A cable carrying *4.5* Ampères feet from standard compass *5* feet from steering compass.

A cable carrying *.6* Ampères feet from standard compass *3* 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 degrees on course in the case of the standard compass, and *nil* degrees on *all the* course in the case of the steering compass.

FOR HARLAND & WOLFF, LTD  
*John Dickenson*  
Managing Director

Builder's Signature.

Date

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 load conditions and found satisfactory. The materials & workmanship were found to be good and sound.*

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

*3/7/28*

Total Capacity of Generators *110* Kilowatts.

The amount of Fee ... £ *32.0.0* : When applied for, *11.6.1928*

Travelling Expenses (if any) £ : : When received, *29.6.28*

Committee's Minute *GLASGOW 26 JUN 1928*

Assigned *Elec. Light.*

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



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