

REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Date of writing Report 9.18.1929 When handed in at Local Office 23.12.1929 Port of GLASGOW. Received at London Office 27 DEC 1929

No. in Survey held at GLASGOW. Date, First Survey 2.11.29 Last Survey 12.12.1929
Reg. Book. 39766 on the CARMEN. AVELLANEDA. (Number of Visits 6)

Built at GLASGOW. By whom built MESSRS A & J. INGHIS LTD. Yard No. 866 When built 1929
Owners ENTRE RIOS RAILWAY CO LTD Port belonging to IBICUY.
Electric Light Installation fitted by MESSRS HARLAND & WOLFF LTD Contract No. 866 When fitted 1929
Is the Vessel fitted for carrying Petroleum in bulk No (GOVAN)

Tons { Gross 2234
Net 1344

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 generator -

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, 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 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 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 Board, where placed at forward end of engine 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 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 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 parts yes

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.S. Circuit Breaker

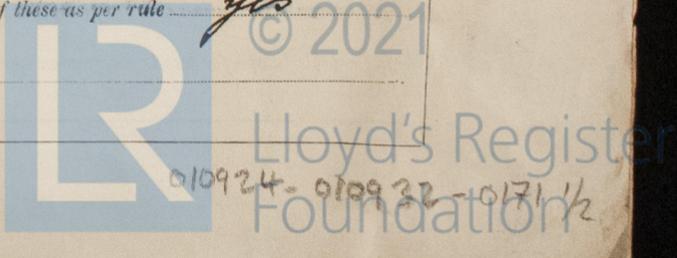
interlocked with D.P. Equalising Switch for each generator and D.P. Switch
Fuses for each outgoing circuit

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-way
Switch 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



Cables: Single, twin, concentric, or multi-core *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 *5 volts*

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

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 *Lead covered cables secured by brass clips throughout except in engine gratings where lead covered armoured braided cables are fitted*

Support and Protection of Cables, state how the cables are supported and protected *Cables in recommended clips to bulkheads and beams, main running fore and aft clipped to girders and cables in engine room run on perforated plating.*

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 *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

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 fitted*

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.*

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

Fittings, are all fittings on weather decks, in stowholds 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*

where are the controlling switches situated

Searchlight Lamps, No. of *1*, whether fixed or portable *fixed*, are their fittings as per Rule *yes*

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 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 *—*, 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 *—*

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	each 55	220	each 350	400	Diesel Engine	Dist. max	156° F.
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.	Rate.			
MAIN GENERATOR S.	2 per pole	.2400	37	.064	250	260	104	Rubber	Lead Covered.
EQUALISER CONNECTIONS	1 only	.1200	37	.064				"	"
AUXILIARY GENERATOR									
EMERGENCY GENERATOR									
ROTARY TRANSFORMER MOTOR GENERATOR									
ENGINE ROOM <i>Aft Lighting</i>	1	.0045	7	.029	12	18.2	20	Rubber	Lead Covered
BOILER ROOM									
AUXILIARY SWITCHBOARDS									
ACCOMMODATION <i>Lighting</i>	1	.0070	7	.036	18	24	160	Rubber	Lead Covered
<i>Navigation Lighting</i>	1	.0045	7	.029	12	18.2	220	"	"
WIRELESS									
SEARCHLIGHT	1	.0030	3	.036	4.5	12	30	Rubber	Lead Covered
MASTHEAD LIGHT	1	.0030	3	.029	2	7.8	66	"	"
SIDE LIGHTS	1	.0030	3	.029	2	7.8	100	"	"
COMPASS LIGHTS	1	.0030	3	.029	14	48	40	"	"
POOP LIGHTS (Aft)	1	.0030	3	.029	2	7.8	590	"	"
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.	Rate.			
BALLAST PUMP										
MAIN BILGE LINE PUMP	1	1	.0030	3	.036	10	12	50	Rubber	Lead Covered.
GENERAL SERVICE PUMP	1	1	.0400	19	.052	48	64	80	"	"
EMERGENCY BILGE PUMP										
SANITARY PUMP										
CIRC. SEA WATER PUMPS	2	1	.0100	7	.044	28	31	20	"	"
CIRC. FRESH WATER PUMPS	1	1	.0070	7	.036	18	24	108	"	"
AIR COMPRESSOR										
FRESH WATER PUMP	1	1	.0030	3	.036	4	12	140	"	"
ENGINE TURNING GEAR	2	1	.0045	7	.029	17	18.2	52	"	"
ENGINE REVERSING GEAR										
LUBRICATING OIL PUMPS	2	1	.0145	7	.052	32	37	20	"	"
OIL FUEL TRANSFER PUMP	1	1	.0030	3	.036	4	12	20	"	"
WINDLASS	1	1	.1000	19	.083	147	118	410	"	"
WINCHES, FORWARD										
WINCHES, AFT										
CAPSTAN	1	1	.0400	19	.052	73	64	480	"	"
STEERING GEAR										
(a) MOTOR GENERATOR										
(b) MAIN MOTOR	1	1	.0225	7	.064	50	46	460	"	"
WORKSHOP MOTOR										
VENTILATING FANS										
LATHE	1	1	.0030	3	.036	6	12	88	"	"
DRIILING MACHINE	1	1	.0030	3	.036	8	12	90	"	"
LUB. OIL PURIFIER	1	1	.0030	3	.036	10	12	84	"	"

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.

Electrical Engineers. Date

COMPASSES.

Distance between electric generators or motors and standard compass *none fitted*

Distance between electric generators or motors and steering compass *80 feet*

The nearest cables to the compasses are as follows:—

A cable carrying *12* Amperes - feet from standard compass *10* feet from steering compass.

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

A cable carrying *.6* Amperes - 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 AND WOLFF, LIMITED

R. Green
 Govan Secretary

Builder's Signature.

Date *13th December 1929*

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 materials and workmanship were found to be good and sound.

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

Elec. Light

30/12/29

Total Capacity of Generators *110* Kilowatts.

The amount of Fee ... £ *32.0.0.* When applied for, ... 19...

Travelling Expenses (if any) £ : : When received, *31.1.30*

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

Committee's Minute *GLASGOW 24 DEC 1929*

Assigned *Elec Light*

Im. 12.28.—Transfer. (The Surveyors are requested not to write on or below the space for Committee's Minute.)



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