

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office

Date of writing Report 24th May 1938 When handed in at Local Office 24th May 1938 Port of Dundee

No. in Survey held at Dundee Date, First Survey 22nd April Last Survey 24th May 1938
Reg. Book. 13646 on the S/S "ROTA" (Number of Visits 4)

Built at Grangemouth By whom built Rockyard Co Yard No. When built 1903
Owners R Tulloch Port belonging to Dundee

Electric Light Installation fitted by W. M. Gillanders Contract No. When fitted 1938

Is the Vessel fitted for carrying Petroleum in bulk No

System of Distribution Double 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 temperature rise yes, are they compound wound No Shunt wound
are they over compounded 5 per cent. , 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 yes Have certificates of test results for machines under 100 kw. been submitted and approved

Have certificates for generators under 100 kw. been supplied and approved

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 Top platform in 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 No woodwork near

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 Port Side Engine Room casing in proximity of 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

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 No woodwork

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

is it of an approved type 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 , is the non-hygroscopic insulating material of an approved type

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, temperature rise of omnibus bars , individual fuses to voltmeter, pilot or earth lamp yes, are moving parts of switches alive in the "off" position No

are all screws and nuts securing connections effectively locked yes are any fuses fitted on the live side of switches No Main Switchgear, description of switchgear for each generator and each outgoing circuit, and arrangement of equalizer switches

Double Pole Quick Make + Break Switch. S.P. switch to each outgoing circuit

Are turbine driven generators fitted with emergency trip switch as per rule No Are cupboards or compartments containing switchboards composed of fire-resisting material or lined with approved material None Instruments on main switchboard one ammeters one voltmeters none synchronising device for paralleling purposes. For compound machines is the ammeter connected on the opposite pole to equaliser connection

Earth Testing, state what means are provided at the main switchboard for indicating the state of the insulation of the system Earth Lamps & fuses Switches, Circuit Breakers and Fusible Cut-outs, do these comply with the requirements of the Rules yes are the fusible cutouts of an approved type yes have the reversed

current protection devices been tested under working conditions are all fuses labelled as per rule

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 multicore *Single* are the cables insulated and protected as per Tables IV, V, X, XI, XII or XIII of the Rules *yes*

If the cables are insulated otherwise than as per Rule, are they of an approved type **Fall of Pressure**, state maximum between bus bars and any point of the installation under maximum load *No fall*

Cable Sockets, are the ends of all cables having a sectional area of 0.04 square inch and above provided with soldering sockets *yes* **Paper Insulated and Varnished Cambric Insulated Cables**,

If conductors are paper or varnished cambric insulated, is the dielectric at the exposed ends of the conductor protected from moisture by being suitably sealed with insulating compound , or waterproof insulating tape

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* are cables laid under machines or floorplates *No* if so, are they adequately protected

Are cables in machinery spaces, galleys, laundries, bathrooms and lavatories lead covered or run in conduit *Part in conduit Part lead covered*

Support and Protection of Cables, state how the cables are supported and protected *Clipped to deck*

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, 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 *Lead sheathing bonded earthed* are their connections made as per Rule *yes*

Alternative Lighting, are the groups of lights in the propelling machinery space arranged as per Rule **Emergency Supply**, state position and method of control of the emergency supply and how the generator is driven

Navigation Lamps, are these separately wired *None fitted* controlled by separate switch and separate fuses , are the fuses double pole , are the switches and fuses grouped in a position accessible only to the officers on watch

has each navigation lamp an automatic indicator as per Rule **Secondary Batteries**, are they constructed and fitted as per Rule

are they ventilated as per Rule

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 *None*

are any fittings placed in spaces where inflammable or explosive dust or gases are liable to be present, if so, how are they protected *None*

how are the cables led

where are the controlling switches situated

are all fittings suitably ventilated , are all switches and lampholders constructed wholly of non-ignitable, non-absorbent materials

Heating and Cooking Appliances, are they constructed and fitted as per Rule , are air heaters constructed and fitted as per Rule

Searchlight Lamps, No. of whether fixed or portable , 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 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

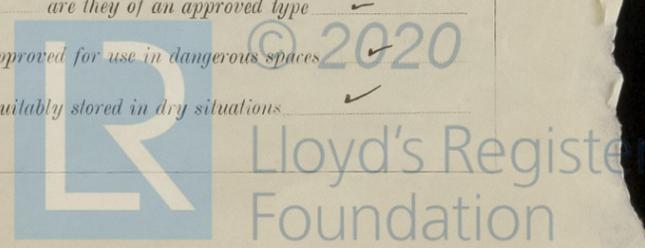
have machines of over 100 BHP been inspected by the Surveyors during manufacture and testing have certificates for all motors for essential services been supplied and approved

Control Gear and Resistances, are the generator field and motor speed regulators, starters and controllers constructed and fitted 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

are all fuses of the filled cartridge type are they of an approved type If portable lamps for use in dangerous spaces are supplied, are they of a self-contained, battery-fed flameproof type approved for use in dangerous spaces

Spare Gear, if the vessel is for open sea service have spares been supplied as per Rule are they suitably stored in dry situations



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	4	110	41	3300	De Laval steam		
AUXILIARY						Jubline		
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 Nominal Area per Pole Sq. Ins.	No.	Diameter.	Circuit.	Rule.			
MAIN GENERATOR	1	.0225	7	.064	2.2	46	8 ft.	V. I. R	Lead covered
EQUALISER CONNECTIONS									
AUXILIARY GENERATOR									
EMERGENCY GENERATOR									
ROTARY TRANSFORMER } MOTOR } GENERATOR...									
ENGINE ROOM	1	.002	3	.029	2.2	17.8	30 ft.	"	"
BOILER ROOM									
AUXILIARY SWITCHBOARDS									
ACCOMMODATION	1	.002	3	.029	2.75	17.8	60 ft	"	"
	1	.002	3	.029	2.2	17.8	60 ft	"	"
WIRELESS									
SEARCHLIGHT									
MASTHEAD LIGHT									
SIDE LIGHTS									
COMPASS LIGHTS									
POOP LIGHTS									
CARGO LIGHTS 2 Circuits...	1	.004	7	.036	3.3	24	80 ft.	"	"
HEATERS	1	.004	7	.036	3.3	24	80 ft.	"	"

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 Nominal 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										

The Electrical Equipment is installed in accordance with the approved plans.

All Insulated Conductors are guaranteed to withstand the immersion and resistance tests specified in the Rules.

The foregoing is a correct description.

William M. Gillanders

Electrical Engineers.

Date *May 24, 1938*

COMPASSES.

Minimum distance between electric generators or motors and standard compass *28ft.*

Minimum distance between electric generators or motors and steering compass

The nearest cables to the compasses are as follows:—

A cable carrying *3* Ampères *10* feet from standard compass feet from steering compass.

A cable carrying Ampères feet from standard compass 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

Has the effect of switching on and off circuits, motors and other electro-magnetic apparatus within the vicinity of the compasses been noted

The maximum deviation due to electric currents was found to be degrees on course in the case of the standard compass, and degrees on course in the case of the steering compass.

Builder's Signature.

Date

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, &c.)

The De Laval Turbine Generator was already installed in the vessel for supplying lights for cargo purposes, when the present Owner bought her. He decided to fit up lighting in the Accommodation & Machinery Space. This has now been done in accordance with the sketch plans attached hereto, with the exception that the existing generator is not compound wound.

The Turbine was opened up cleaned & examined, & it was found in good order & condition. It was tried out under load when the wiring was completed, & it was found satisfactory in all respects.

Total Capacity of Generators *4* Kilowatts.

The amount of Fee ... £ *4* :- : When applied for, *19/5/1938*

Travelling Expenses (if any) £ : : When received, *13/7/1938*

John Houston
Surveyor to Lloyd's Register of Shipping.

Committee's Minute *FRI 10 JUN 1938*

Assigned *As now*



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2m.12.36.—Transfer. The Surveyors are requested not to write on or below the space for Committee's Minute