

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office APR 28 1938

Date of writing Report 14th April, 1938 When handed in at Local Office 10 Port of Middlesbrough
No. in Survey held at Middlesbrough and Date, First Survey 3rd March, Last Survey 12th April 1938
Reg. Book. Suppl. West Hartlepool (Number of Visits... 4)
39951 on the S.S. "ROSALIA"

Built at Hariton Hill on 2nd By whom built Furness S. B. Co. Ltd. Yard No. 278 When built 1938
Owners N. V. Curacaoische Scheepv. Maats. Port belonging to Willemstad
Electric Light Installation fitted by Furness S. B. Co. Ltd. Elec. Dept. Contract No. 278 When fitted 1938
Is the Vessel fitted for carrying Petroleum in bulk Yes

System of Distribution Double wire ✓

Pressure of supply for Lighting 110 ✓ volts, Heating — volts, Power 110 ✓ 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 temperature rise 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 Only one fitted ✓ as 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 Yes, Cert. Norwich ✓ Have machines over 100 kw. been inspected by the Surveyors during manufacture and testing None fitted ✓

Have certificates for generators under 100 kw. been supplied and approved Manufacturers' Cert. only supplied ✓
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 Engine room starboard 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 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 Engine room starboard side ✓

near 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 — 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 ✓
is it of an approved type Yes ✓, if semi-insulating material is used, are all conducting parts insulated from the slab with mica or micaite 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 Yes ✓

individual fuses to voltmeter, pilot or earth lamp Yes ✓, are moving parts of switches alive in the "off" position No ✓

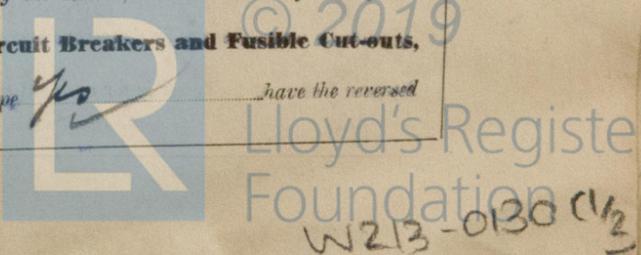
are all screws and nuts securing connections effectively locked Yes ✓ are any fuses fitted on the live side of switches No ✓
Main Switchgear, description of switchgear for each generator and each outgoing circuit, and arrangement of equalizer switches D.P. sw. + D.P. fuses on dynamo main; D.P. sw. + D.P. fuses on outgoing circuits.

Are turbine driven generators fitted with emergency trip switch as per rule — Are cupboards or compartments containing switchboards composed of fire-resisting material or lined with approved material Yes ✓

Instruments on main switchboard One ✓ ammeters One ✓
voltage meters — 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 E lamps coupled to E through switches 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 —



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current protection devices been tested under working conditions. Yes are all fuses labelled as per rule 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 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 Yes **Fall of Pressure,** state maximum between bus bars and any point of the installation under maximum load Less than 5.3 volts

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 Yes, or waterproof insulating tape Yes **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 Yes if so, are they adequately protected Yes

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

Support and Protection of Cables, state how the cables are supported and protected Please see below

If cables are run in wood casings, are the casings and caps secured by screws Yes, are the cap screws of brass Yes, 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, are the cables and fittings in accordance with the special requirements Arrang. accord. Secy's letter of 12/7/37

Joints in Cables, state if any, and how made, insulated, and protected Home made

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 Yes 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 Single. Protection of Cables: L.C.A. cables run in pipe with expansion joints along trunk top; L.C.A. cables clipped up in machinery spaces & alleyways; L.C.A. cables clipped to wood frames in accommodation

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 **Secondary Batteries,** are they constructed and fitted as per Rule Yes are they ventilated as per Rule 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 Yes

are any fittings placed in spaces where inflammable or explosive dust or gases are liable to be present, if so, how are they protected Pumproom fittings enclosed in steel casing with gastight glazed apertures how are the cables led in gastight covered conduit from accom. alleyway to pumproom accommodation space where are the controlling switches situated in accommodation space

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

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

Searchlight Lamps, No. of None fitted whether fixed or portable None, are their fittings as per Rule None

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 None and None

have machines of over 100 BHP been inspected by the Surveyors during manufacture and testing None fitted have certificates for all motors for essential services been supplied and approved None fitted **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 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 are all fuses of the filled cartridge type Yes are they of an approved type Yes

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 Yes

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

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	10	110	91	620	Single expansion steam engine		
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 Nominal Area per Pole Sq. Ins.	No.	Diameter.	In Circuit.	Rule.			
MAIN GENERATOR	1	.075	19	.072	91	97	36	V.I.R.	L.C.A. Pb.
EQUALISER CONNECTIONS									
AUXILIARY GENERATOR									
EMERGENCY GENERATOR									
ROTARY TRANSFORMER MOTOR GENERATOR									
ENGINE ROOM									
BOILER ROOM	1	.0045	7	.029	18	18.2	24	V.I.R.	L.C.A. Pb.
AUXILIARY SWITCHBOARDS									
ACCOMMODATION									
Trunking & Navigation	1	.024	19	.052	19	64	280	V.I.R.	L.C.A. Pb.
Trunking	1	.024	19	.052	8	64	760	V.I.R.	L.C.A. Pb.
Accom. Pb.	1	.0035	7	.044	12	46	220	V.I.R.	L.C.A. Pb.
Accom. Pb.	1	.01	7	.044	20	31	160	V.I.R.	L.C.A. Pb.
WIRELESS	1	.01	7	.044	15	31	220	V.I.R.	L.C.A. Pb.
SEARCHLIGHT									
MASTHEAD LIGHT	1	.002	3	.029	36	7.8	420	V.I.R.	L.C.A. Pb.
SIDE LIGHTS	1	.002	3	.029	36	7.8	70	V.I.R.	L.C.A. Pb.
COMPASS LIGHTS	1	.002	3	.029	44	7.9	40	V.I.R.	L.C.A. Pb.
WATER LIGHTS	1	.002	3	.029	36	7.8	700	V.I.R.	L.C.A. Pb.
CARGO LIGHTS									
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 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	1	1	.01	7	.044	17	31	200	V.I.R.	L.C.A. Pb.
VENTILATING FANS	1	1	.0045	7	.029	18.5	18.2	200	V.I.R.	L.C.A. Pb.

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.

P. S. Flower per *CB* Electrical Engineer. Date *23-4-38*

COMPASSES.

Minimum distance between electric generators or motors and standard compass *188 feet*

Minimum distance between electric generators or motors and steering compass *184 feet*

The nearest cables to the compasses are as follows:—

A cable carrying *.14* Ampères *on the* ~~feet from~~ standard compass *10* feet from steering compass.

A cable carrying *.14* Ampères *10* feet from standard compass *on the* ~~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 *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 *No* degrees on *every* course in the case of the standard compass, and *No* degrees on *every* course in the case of the steering compass.

Jas. M. Robertson Builder's Signature. Date *23/4/38*
 Secretary.

Is this installation a duplicate of a previous case *Yes* If so, state name of vessel *S.S. "Rebecca"*

General Remarks (State quality of workmanship, opinions as to class, &c. *The electrical equipment of this vessel has been fitted out under special survey. The materials used and the workmanship are good. On completion the equipment was run under working conditions, the dynamo engine governor operated, the main switchboard, distribution boards, switches, fuses cables, motors and fittings examined and tested, the insulation resistances of all circuits and appliances measured and the spare gear checked. In my opinion the equipment can be considered suitable for a classed vessel carrying petroleum in bulk.*

Noted 10/4/38

Total Capacity of Generators *10* Kilowatts.

The amount of Fee ... £ *10* : - : *Std of*
 Travelling Expenses (if any) £ : : *1.6*
 When applied for, *22-4-1938*
 When received, *1.6 1938*

G. Anterson
 Surveyor to Lloyd's Register of Shipping.

Committee's Minute

TUE 3 MAY 1938

Assigned

See Ord. J.E. 16203

2011.12.30.—Transfer. The Surveyors are requested not to write on or below the space for Committee's Minute



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