

Rpt. 13.

No. 94861

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

31 MAR 1937

Received at London Office

Date of writing Report 19 When handed in at Local Office 27.3.37 Port of Newcastle.
 No. in Survey held at Newcastle. Date, First Survey 18 Dec 1936 Last Survey 17 March 1937
 Reg. Book. Suff. (Number of Visits.....12.....)
 90026 on the M.V. "Regent Lion" Tons { Gross 9551
 Net 5794
 Built at Newcastle. By whom built Swan Hunter & Wigham Richardson Ltd. and No. 1521 When built 1937
 Owners C. T. Bowring & Co. Ltd. Port belonging to London
 Electric Light Installation fitted by Swan Hunter & Wigham Richardson Ltd. Contract No. 1521 When fitted 1937.
 Is the Vessel fitted for carrying Petroleum in bulk Yes.

System of Distribution Double wire. volts, Power 110 volts.

Pressure of supply for Lighting 110 volts, Heating — Power Direct

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 No, 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 Yes Have machines over 100 kw. been inspected by the Surveyors during manufacture and testing —

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

Position of Generators Engine room starboard side. Are the lubricating arrangements of the generators as per Rule Yes, 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

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 Yes

is the non-hygroscopic insulating material of an approved type Yes, 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 alike 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.S + DP fuses on dynamo main, DP COS + DP fuses on each outgoing circuit.

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 —

Instruments on main switchboard 3 ammeters 3

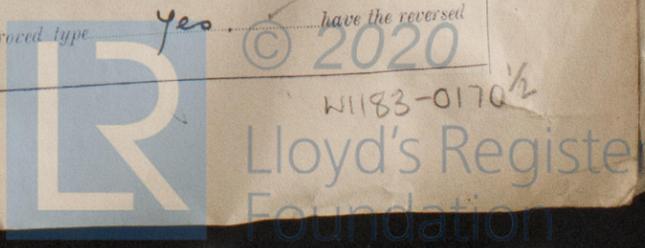
voltmeters — synchronising device for paralleling purposes. For compound machines is the ammeter connected on the opposite pole to equaliser connection —

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 —

Dynamo

ENCLOSURE



current protection devices been tested under working conditions —

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 or XI of the Rules yes ✓

If the cables are insulated otherwise than as per Rule, are they of an approved type — 2.8 Volts ✓

Fall of Pressure, state maximum between bus bars and any point of the installation under maximum load 2.8 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 — 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 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 L.C.A cables clipped on steel supports on fore and aft gangway in machinery spaces. L.C clipped up in acc? ✓

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 yes ✓

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 — 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 yes ✓ has each navigation lamp an automatic indicator as per Rule yes ✓

Secondary Batteries, are they constructed and fitted as per Rule —

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 in pump rooms special gas tight fittings ✓ are any fittings placed in spaces where inflammable or explosive dust or gases are liable to be present, if so, how are they protected in galvanised gastight piping ✓ how are the cables led —

where are the controlling switches situated in midship pantry. ✓

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 — are air heaters constructed and fitted as per Rule —

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

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 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 —

have machines of over 100 BHP been inspected by the Surveyors during manufacture and testing — **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 yes ✓ are all fuses of the fitted 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 type approved by the Home Office yes ✓

Spare Gear, if the vessel is for open sea service have spares been supplied as per Rule yes ✓

PARTICULARS OF GENERATING PLANT.

DESCRIPTION OF GENERATOR.	No. of	RATED AT				DRIVEN BY	WHERE DRIVEN BY AN INTERNAL COMBUSTION ENGINE.	
		Kilowatts.	Volts.	Amps.	Revs. per Min.		Fuel Used.	Flash Point of Fuel.
MAIN	2	22	110	200	685	Steam Engine	✓	
AUXILIARY	1	5	110	46	800	Diesel Engine	✓	
EMERGENCY								
ROTARY TRANSFORMER								

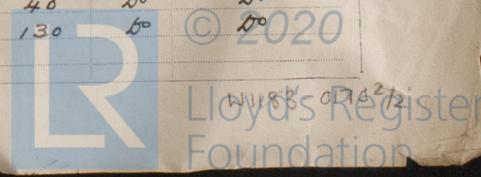
GENERATOR, LIGHTING AND HEATING CONDUCTORS.

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	.25	37	.093	200	214	40	V.I.R.	L.C.A.
EQUALISER CONNECTIONS									
AUXILIARY GENERATOR	1	.04	19	.052	46	64	40	50	50
EMERGENCY GENERATOR									
ROTARY TRANSFORMER MOTOR GENERATOR									
ENGINE ROOM	1	.01	7	.044	16	31	200	50	50
BOILER ROOM	1	.01	7	.044	13	31	120	50	50
AUXILIARY SWITCHBOARDS									
Navigation	1	.007	7	.036	6	24	600	50	50
Capt. in midships Post	1	.0225	7	.064	26	46	530	50	50
Midships Stbd	1	.04	19	.052	34	64	510	50	50
Aft. Acc. Post	1	.0145	7	.052	37	37	210	50	50
" " Stbd	1	.1	19	.083	100	118	190	50	50
ACCOMMODATION									
Shore Supply	1	.1	19	.083	100	118	200	50	50
WIRELESS	1	.0225	7	.064	15	46	540	50	50
SEARCHLIGHT	1	.002	3	.029	2.0	7.8	80	50	L.C.
MASTHEAD LIGHT	1	.002	3	.029	3	7.8	370	50	L.C.A.
SIDE LIGHTS	1	.002	3	.029	3	7.8	120	50	L.C.
COMPASS LIGHTS	1	.002	3	.029	1	7.8	50	50	L.C.
STEER ROOM LIGHTS	1	.002	3	.029	3	7.8	780	50	L.C.A.
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 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	.04	19	.052	60	64	180	V.I.R.	L.C.A.
VENTILATING FANS	1	.003	.003	3	.026	10	12	65	50	50
" " aft	1	.003	.003	3	.036	10	12	112	50	50
" " Eng room	1	.007	.007	7	.026	24	24	220	50	50
Oil Purifiers	2	.007	.007	7	.026	20	24	50	50	50
Refrig circ pump.	1	.002	.002	3	.029	6	7.8	40	50	50
Refrig motor	1	.04	.04	19	.052	56	64	130	50	50

© 2020



All Conductors are of annealed copper conforming to British Standard Specification No. 7 (or International Electro-technical Commission Publication No. 28).

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

The foregoing is a correct description.

For
SWAN, HUNTER, & WIGHAM RICHARDSON, LTD.

W. H. M. Electrical Engineers.

Date *23rd March 37*

COMPASSES.

Distance between electric generators or motors and standard compass *225 feet.*

Distance between electric generators or motors and steering compass *222 feet.*

The nearest cables to the compasses are as follows:—

A cable carrying *.1* Ampères *on the* ~~from~~ standard compass *6* feet from steering compass.

A cable carrying *.1* Ampères *6* 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* *To be filled in after adjustment of compasses*

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* course in the case of the standard compass, and *nil* degrees on *all* course in the case of the steering compass.

For
SWAN, HUNTER, & WIGHAM RICHARDSON, LTD.

W. H. M.

Builder's Signature.

Date *23/3/37.*

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. *The above instⁿ has been fitted out under special survey. The workmanship & materials used are good. The insulation resistance good. The dynamos, governors & the whole instⁿ has been tested under working conditions & found to be satisfactory. This vessel is eligible in my opinion for notation D.F., E.S.D.*

Total Capacity of Generators *49* Kilowatts.

The amount of Fee ... £ *27 : 5* :—

When applied for,
30 MAR 1937

Travelling Expenses (if any) £

When received,
2.4.37

W. T. Badger
Surveyor to Lloyd's Register of Shipping.

Committee's Minute

FRI 2 APR 1937

Assigned *See other F.C. report*



© 2020

Lloyd's Register
Foundation