

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. Supp.

(Number of Visits.....12.....)

90026 on the

M.V. "Regent Lion"

Tons { Gross 9551  
Net 5794

Built at

Newcastle.

By whom built Swan Hunter &amp; Wigham Richardson Ltd.

and No. 1521

When built 1937

Owners L. T. Bowring &amp; Co. Ltd.

Port belonging to

London

Electric Light Installation fitted by Swan Hunter &amp; Wigham Richardson Ltd. Contract No. 1521 When fitted 1937.

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

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

Are the lubricating arrangements of the generators as per Rule

Yes

Position of Generators

Engine room starboard side.

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

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 micanite 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

Yes

Are the fittings as per Rule regarding:— spacing or shielding of live parts

omnibus bars

Yes

individual fuses to voltmeter, pilot or earth lamp

Yes

are moving parts of switches alive in the

"off" position

No

absence of fuses on back of board

Yes

temperature rise of

switches

No

are all screws and nuts securing connections effectively locked

Yes

are any fuses fitted on the live side of

Main Switchgear, description of switchgear for each generator and each outgoing circuit, and arrangement of equalizer switches

D.P.S. + D.P. fuses on dynamo main switch D.P.C.O.S. + D.P. 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

voltage

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 &amp; 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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31 MAR 1937

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 — **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 — 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, lavatories, bathrooms and latrines 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 the saft gangway. & in machinery spaces. L.C. clipped up in acc<sup>n</sup> ✓

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 Yes ✓

**Joints in Cables,** state if any, and how made, insulated, and protected none 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 — Yes ✓

**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 ✓

**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 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 ✓ gas tight piping ✓, how are the cables led — Yes ✓

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 — Yes ✓, are air heaters constructed and fitted as per Rule — Yes ✓

**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 — Yes ✓, are their live parts insulated from the frame or case — Yes ✓, are their fittings as per Rule — Yes ✓

**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 ✓

have machines of over 100 BHP been inspected by the Surveyors during manufacture and testing — 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 — 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 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.		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 ... Port.	1	.01	7	.044	16	31	200	50	50
BOILER ROOM ... Stbd.	1	.01	7	.044	13	31	120	50	50
AUXILIARY SWITCHBOARDS ...									
Navigation	1	.007	7	.036	6	24	600	50	50
Capt. & Midship's Port	1	.0225	7	.064	26	46	530	50	50
Midship's Stbd	1	.04	19	.052	34	64	510	50	50
Aft. Acc. Port	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 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.		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 Midship	1	.1	.003	3	.026	10	12	65	50	50
" " aft	1	.1	.003	3	.036	10	12	112	50	50
" " Eng room	1	.1	.007	7	.026	24	24	220	50	50
Oil Purifiers	2	.1	.007	7	.026	20	24	50	50	50
Refrig. case pump.	1	.1	.002	3	.029	6	7.8	40	50	50
Refrig. motor	1	.1	.04	19	.052	56	64	130	50	50

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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.

Electrical Engineers.

Date 23<sup>rd</sup> 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 ~~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. B. B. B.

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 inst<sup>n</sup> has been fitted out under special survey. The workmanship & materials used are good. The insulation resistance good. The dynamo, governors & the whole inst<sup>n</sup> 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 : 30 MAR 1937

Travelling Expenses (if any) £

When received.

24.37 5/4

W. T. Badger

Surveyor to Lloyd's Register of Shipping.

Committee's Minute

FRI 2 APR 1937

Assigned See other F.C. report



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