

Rpt. 13.

No. 80372

REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office 13 MAY 1926

Date of writing Report 10 When handed in at Local Office 15/5/26 Port of NEWCASTLE-ON-TYNE

No. in Survey held at Newcastle Date, First Survey 26 Jan 4 Last Survey 16 April 1926
Reg. Book, Supp. (Number of Visits 18)40259 on the Northland Tons { Gross 3700
Net 2150

Built at Newcastle By whom built Swan Hunter & Wigham Richardson Hard No. 1214 When built 1926

Owners Clarke S. S. & Co. Ltd Port belonging to

Electric Light Installation fitted by Swan Hunter & Wigham Richardson Ltd Contract No. 1214 When fitted 1926

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 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 No, 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 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

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 micaite 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, 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 300 Amp D. P. Switches

Fuses on generators, single pole 2-way switches + D.P. fuses for each circuit

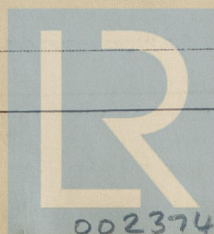
Instruments on main switchboard 2 ammeters 2 voltmeters — synchronising device for paralleling purposes.

Earth Testing, state what means are provided at the main switchboard for indicating the state of the insulation of the system Earth lamps connected

to earth through switches & fuses

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



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002374-002384-013 1/2

Cables: Single, twin, concentric, or multicore single 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 4.6 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 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

Support and Protection of Cables, state how the cables are supported and protected Engine + stokehold cables clipped to bulkheads + clipped on tray plating. Lighting + low pressure cables run in wood casing. Lead core cables for harp.

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, if lights are fitted, are the cables and fittings in accordance with the special requirements

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 rubber.

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 Boat deck, switchboard

fitted in emergency dynamo room + supplied from armoured paraffin driven engine + dynamo
emergency switchboard fed from main board through O.P. change over switches

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 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

are any fittings placed in spaces where inflammable or explosive dust or gases are liable to be present, if so, how are they protected cast brass

Pendant fittings with W.T. Based cast brass guards, how are the cables led

Lead covered + armoured cables clipped to deck

where are the controlling switches situated aft entrance to tween decks

Searchlight Lamps, No. of one, whether fixed or portable 20 fitted later, 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 —

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 —

If portable lamps for use in dangerous spaces are supplied, are they of a type approved by the Home Office —

PARTICULARS OF GENERATING PLANT.

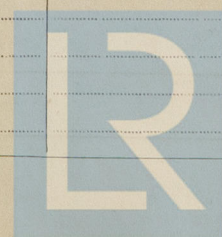
DESCRIPTION OF GENERATOR.	No. of	RATED AT				DRIVEN BY	WHERE DRIVEN BY AN INTERNAL COMBUSTION ENGINE.	
		Kilowatts.	Volts.	Ampères.	Revs. per Min.		Fuel Used.	Flash Point of Fuel.
MAIN ...	2	30	110	243	460	steam engine enclosed		
AUXILIARY ...								
EMERGENCY ...	1	12	110	109	500	Bitol paraffin engine		
ROTARY TRANSFORMER								

LIGHTING AND HEATING CONDUCTORS.

Ref. No.	DESCRIPTION.	No. of Conductors.	Effective Area of each Conductor. Sq. Ins.	COMPOSITION OF STRAND.		Total Maximum Current. Amperes.	Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED.
				No.	Diameter.				
	MAIN GENERATOR	2	.4064	61	.093	226	43	V.I.R	Lead covered + arm'd
	EQUALISER CONNECTIONS								
	AUXILIARY GENERATOR								
	EMERGENCY GENERATOR	2	.1009	19	.083	109	20	50	50
	ROTARY TRANSFORMER								
	AUXILIARY SWITCHBOARDS								
	ENGINE ROOM								
	BOILER ROOM	2	.00455	7	.029	12	30	50	50
	ACCOMMODATION								
	Laundry + Room deck	2	.0396	19	.052	51.4	360	50	Lead covered + arm'd
	Smoke room + Room deck	2	.01046	7	.074	24	300	50	50
	Dining saloon + upper deck	2	.0396	19	.052	54.6	200	50	50
	Upper deck aft.	2	.02214	7	.064	35.5	260	50	50
	Crew + stowage for	2	.01462	7	.052	16.0	520	50	50
	Galley Circuit	2	.02214	7	.064	45.0	300	50	50
	Galley toaster	2	.02214	7	.064	43.0	310	50	50
	Engineers acc'd	2	.00455	7	.029	13.5	180	50	50
	Deck lights	2	.00701	7	.036	11.0	330	50	50
	Emergency lighting	2	.00455	7	.029	13.5	6	50	Lead covered
	WIRELESS	2	.02214	7	.064	15.0	180	50	50
	SEARCHLIGHT	2	.06	19	.064	80	400	50	Lead covered + braided
	MASTHEAD LIGHT	2	.00194	3	.029	.5	400	50	Lead covered
	SIDE LIGHTS	2	.00194	3	.029	.5	80	50	50
	COMPASS LIGHTS	2	.00194	3	.029	.25	60	50	50
	CLIM LIGHTS	2	.00194	3	.029	.5	460	50	50
	CARGO LIGHTS	2	.00299	3	.036	2.5	120	50	Lead covered + arm'd
	Heater + Saloon	2	.00701	7	.036	18.0	75	50	V.I.R. braided
	HEATER + Saloon	2	.01046	7	.074	18.0	240	50	50

MOTOR CONDUCTORS.

Ref. No.	DESCRIPTION.	No. of Motors.	Effective Area of each Conductor. Sq. Ins.	COMPOSITION OF STRAND.		Total Maximum Current. Amperes.	Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED.
				No.	Diameter.				
	BALLAST PUMP								
	MAIN BILGE LINE PUMPS								
	GENERAL SERVICE PUMP								
	EMERGENCY BILGE PUMP	1	.06	19	.064	60	350	V.I.R	Lead covered + arm'd
	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								
	Dish washer	1	.00455	7	.029	16.0	60	50	Lead covered
	Potato Peeler	1	.00299	3	.036	6.8	50	50	50
	Galley exhaust fan	1	.00194	3	.029	4.5	120	50	50



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002374-002384-0113 2/2

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.

For
SWAN, HUNTER, & WIGHAM RICHARDSON, LTD. *John* Electrical Engineers.

Date *11 May 1926*

COMPASSES.

Distance between electric generators or motors and standard compass.

Distance between electric generators or motors and steering compass.

The nearest cables to the compasses are as follows:—

A cable carrying *11.0* Amperes *15* feet from standard compass *15.0* feet from steering compass.

A cable carrying *5.5* Amperes *6* feet from standard compass *6* feet from steering compass.

A cable carrying *.25* Amperes *on the* ~~standard~~ compass *9* 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 *nil* degrees on *each* course in the case of the standard compass, and *nil* degrees on *each* course in the case of the steering compass.

FOR
SWAN, HUNTER & WIGHAM RICHARDSON, LTD.

Builder's Signature.

Date *13 May 1926*

G. J. Dwyer
DIRECTOR

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 installation is in accordance with the Society's Rules. The vessel is eligible in my opinion for notation elec light, unless

*It is submitted that
this vessel is eligible for
THE RECORD. Elec. Light.
W.T. Badger
19/5/26.*

Total Capacity of Generators *72* Kilowatts.

The amount of Fee ... £ *29 : 14* : *3/5/1926*
When applied for,
Travelling Expenses (if any) £ : : *5/5/1926*
When received,

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

Committee's Minute *FRI. 21 MAY 1926*

Assigned *Elec. light*

Im. 128.—Transfer.
(The Surveyors are requested not to write on or back to the sign or Committee's Minute.)



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