

# RETAIN

Rpt. 13.

No. 2151

## REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office 21 OCT 1925

Date of writing Report 19<sup>th</sup> October 1925 When handed in at Local Office

Port of Barrow-in-Furness

No. in Survey held at Barrow.  
Reg. Book.

Date, First Survey Mar 26

Last Survey Aug 12 1925

(Number of Visits.....)

15911 on the Tarn screw steamer "Carinthia"

Tons { Gross 20244  
Net 12088

Built at Barrow.

By whom built

Hickers Ltd

Yard No. 586

When built

Owners Cunard S.S. Co. Ltd

Port belonging to

Liverpool

Electric Light Installation fitted by

Hickers Ltd

Contract No. 586

When fitted 1925

### System of Distribution

Three phase

Pressure of supply for Lighting

110

volts, Heating

220

volts, Power

220

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 overload

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

Yes

, is an adjustable regulating resistance fitted in

series with each shunt field

Yes

Are all terminals accessible and clearly marked

Yes

, are they so spaced or shielded that they cannot be accidentally earthed,

or short circuited

Yes

Are the lubricating arrangements of the generators as per Rule

Yes

### Position of Generators

Lower Engine room platform: Port & Starboard of Centre line.

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

to woodwork etc. and

Yes

, are the generators protected from mechanical injury and damage from water, steam or oil

Yes

are their axis 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

On Platform at after end of Engine room.

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

to woodwork etc. and

Yes

are they constructed wholly of durable, incombustible 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 connected to one pole

insulated from the slab with mica or micanite and the slab similarly insulated from its framework

Yes

, and is the

frame effectively earthed

Yes

Are the following fittings as per Rule, viz.:— 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

2500 Amp. triple pole circuit breakers, with overload, no volt and reverse current trip

Instruments on main switchboard Seventeen ammeters Two voltmeters One 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 Ammeter with 10 circuit breaker and earth resistance is provided on main switchboard

Switches, Circuit Breakers and Fusible Cut-outs, do these comply with the requirements of the Rules

Yes

Section and Distribution Boards, is the construction, protection, insulation, material, and position of these as per rule

Yes





**Insulation of Cables**, state type of cables, single or twin *Single* are the cables insulated and protected as per Tables III or IV of the Rules *Yes*

**Fall of Pressure**, state maximum between bus bars and any point of the installation under maximum load

**Cable Sockets and other connections**, are the ends of all cables having a sectional area of 0.007 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 *None*

**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 *Wood casings; Porcelain rack insulators; Clipped in bulkheads & casings; and in conduits where necessary.*

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 VI *Yes*

**Refrigerated Chambers**, if lights are fitted, are the cables and fittings in accordance with the special requirements *Yes*

**Joints in Cables**, state if any, and how made, insulated, and protected *No joints*

**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 Positions**, 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 *Fibre*

**Earthing Connections**, state what earthing connections are fitted and their respective sectional areas *System insulated*

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 *36 K.W. 220 volt Petrol-Paraffin driven generator at Aft end of Boat Deck. Controlled at emergency switchboard in same compartment*

**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*, are separate screens provided for the use of oil and electric side lights *Yes*

are separate oil lanterns provided for the mast head lights and side lights *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 *No*

are any fittings placed in spaces where inflammable or explosive dust or gases are liable to be present, if so, how are they protected *No*

how are the cables led ☒

where are the controlling switches situated ☒

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

**Are Lamps**, other than searchlight lamps, No. of *None*, 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 axis 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 as per Rule *Yes*

**Lightning Conductors**, where lightning conductors are required, are these fitted as per Rule *None*

**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 ☒



# RETAIN

21 OCT 1953

## 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	375	220	1405	1000	Steam Turbine through bearing	✓	✓
AUXILIARY ...	✓	✓	✓	✓	✓	✓	✓	✓
EMERGENCY ...	1	36	220	164	450	Thompson Petrol-Paraffin Engine	Paraffin	(Petrol starting)
ROTARY TRANSFORMER	2							

## LIGHTING AND HEATING CONDUCTORS.

Ref. No.	DESCRIPTION.	No. of Conductors.	Effective Area of each Conductor. Sq. Ins.	COMPOSITION OF STRAND.		Total Maximum Current. Ampères.	Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED.
				No.	Diameter.				
	MAIN GENERATORS.	8	.78	91	.103	1455	60 30	V.I.R.	Cotton Braided
	AUXILIARY GENERATOR	2	.2	37	.083	164	30 15	"	"
	EMERGENCY GENERATOR	1	.0045	4	.029	11	18	"	Lead Covered Arm & BS
	ROTARY TRANSFORMER	2	.0045	4	.029	11	18	"	Lead Covered Arm & BS
	AUXILIARY SWITCHBOARDS								
	ENGINE ROOM								Lead Covered Arm & BS
	BOILER ROOM								"
	Dish Washer 3 of 4 HP	2	.004	4	.036	16	162	V.I.R.	Cotton Braided in Conduit
	Ice Cream Grater 1 of 2 HP	2	.003	3	.036	8	48	"	"
	Sough Mixer 1 of 3 HP	2	.0045	4	.029	12	48	"	"
	Large Washer 1 of 5 HP	2	.004	4	.036	20	60	"	"
	Hydro Extractor 2 of 5 HP	2	.004	4	.036	20	48	"	"
	Byssom Tumbler 1 of 2 HP	2	.003	3	.036	8	36	"	"
	Sanfo R. 1 of 2 HP	2	.003	3	.036	8	36	"	"
	Medium Washer 1 of 1 HP	2	.003	3	.036	4	42	"	"
	Pump Motor 1 of 1 HP	2	.003	3	.036	4	84	"	"
	Calender 1 of 2 HP	2	.003	3	.036	8	36	"	"
	Collar Machine 1 of 1 HP	2	.003	3	.036	1	30	"	"
	Slasher 1 of 6 HP	2	.003	3	.036	24	24	"	"
	WIRELESS	2	.0228	19	.064	25	180	V.I.R.	Cotton Braided
	SEARCHLIGHT	2	.003	3	.036	91	504 960	"	Cotton Braided in Conduit
	MASTHEAD LIGHT	2	.0045	4	.029	11	105 7 120	"	"
	SIDE LIGHTS	2	.002	3	.029	91	25	"	"
	COMPASS LIGHTS	2	.002	3	.029	25	25	"	"
	POOP LIGHTS							"	"
	CARGO LIGHTS	2	.004	4	.036	3.25	180	"	"
	ARC LAMPS								
	HEATERS								

## MOTOR CONDUCTORS.

Ref. No.	DESCRIPTION.	No. of Motors.	Effective Area of each Conductor. Sq. Ins.	COMPOSITION OF STRAND.		Total Maximum Current. Ampères.	Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED.
				No.	Diameter.				
	BALLAST PUMP	1-30 HP	.12	37	.064	120	60	V.I.R.	Lead Covered in Conduit
	SLUDGE PUMPS	1-1 HP	.003	3	.036	4	150	"	Cotton Braided in Conduit
	GENERAL SERVICE PUMP	1-2 HP	.003	3	.036	8	210	"	"
	EMERGENCY BILGE PUMP	1-15 HP	.06	19	.064	60	258	"	Cotton Braided in Conduit
	SANITARY PUMP	1-40 HP	.2	37	.083	160	84	"	Lead Covered Arm & BS
	CIRC. SEA WATER PUMPS	2-8 HP	.0045	4	.029	14	48 8 90	"	Cotton Braided in Conduit
	CIRC. FRESH WATER PUMPS	3-8 HP	.004	4	.036	22	48 8 24	"	"
	BRINE PUMP	1-4 HP	.004	4	.036	18	48	"	Lead Covered Arm & BS
	AIR COMPRESSOR	4-40 HP	.12	37	.064	128	48 8 66	"	Cotton Braided in Conduit & Lead Covered Arm & BS
	ENGINE TURNING GEAR	2-20 HP	.06	19	.064	80	42	"	Lead Covered Arm & BS
	ASH HEATER	1-3 HP	.004	4	.036	12	42	"	Cotton Braided
	FORCED DRAUGHT FANS	2-40 HP	.4	61	.093	280	360 8 360	"	"
	WORKSHOP	1-35 HP	.0045	4	.029	14	48	"	Lead Covered Arm & BS
	WINDLASS	1-140 HP	1.0	127	.103	560	330	"	C.I.L. or Insulation
	WINCHES, DECK BOAT	6-24 HP	.045	19	.042	108	360	"	Cotton Braided
	WINCHES, DECK	10-30 HP	.12	37	.064	120	132	"	"
	STEERING GEAR	2-40 HP	.25	37	.093	160	450 8 420	"	Lead Covered Arm & BS
	PASSENGER LIFTS	2-115 HP	.04	19	.052	46	132 8 120	"	Cotton Braided in Conduit
	VENTILATING FANS	1-5 HP	.003	3	.036	2	90	"	"
	"	2-45 HP	.003	3	.036	3	90	"	"
	"	9-12 HP	.003	3	.036	6	90	"	"
	"	1-2 HP	.003	3	.036	8	60	"	"
	"	8-22 HP	.0045	4	.029	10	42	"	"
	"	11-3 HP	.0045	4	.029	12	108	"	"
	"	2-44 HP	.004	4	.036	18	60	"	"
	"	5-42 HP	.004	4	.036	18	60	"	"
	"	4-5 1/2 HP	.004	4	.036	22	84	"	"
	"	4-9 HP	.0225	4	.064	36	96	"	"
	Thermotanks	4-4 1/2 HP	.01	4	.044	18	48	"	"
	"	4-6 1/2 HP	.01	4	.044	26	48	"	"





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.

*J. Seymour* Electrical Engineers.

Date *20 Oct 25*

#### COMPASSES.

Distance between electric generators or motors and standard compass *Dynamo 240 ft. nearest motor 32 ft.*

Distance between electric generators or motors and steering compass *" 232 ft. " 28 ft.*

The nearest cables to the compasses are as follows:—

A cable carrying *8* Amperes *8* feet from standard compass *5* feet from steering compass.

A cable carrying *13* Amperes *5* feet from standard compass *9* feet from steering compass.

A cable carrying *✓* Amperes *✓* 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 *Nil* degrees on *all* courses in the case of the standard compass, and *Nil* degrees on *all* courses in the case of the steering compass.

For **VICKERS Limited.**

*S. H. J. M.*  
DIRECTOR.

Builder's Signature. Date *20. 8. 25.*

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

General Remarks (State quality of workmanship, opinions as to class, &c.)

*This Electric light and Power installation has been efficiently fitted on board, and proved satisfactory under working conditions.*

*In my opinion this vessel is eligible to have the notation of "Electric light" made in the Register Book.*

It is submitted that  
this vessel is eligible for  
THE RECORD. Elec. light.

*J. W. D.*  
*26/10/25.*

Total Capacity of Generators *486* ✓ Kilowatts

The amount of Fee ... £ *51* : *3* :  
Travelling Expenses (if any) £ *—* :  
When applied for, *13 Aug. 1925*  
When received, *26 Aug. 1925*

*Wm Cowie*  
Surveyor to Lloyd's Register of Shipping.

Committee's Minute

Assigned