

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Date of writing Report 18th Nov. 1936 When handed in at Local Office 2 DEC. 1936 Received at London Office 5 DEC 1936

No. in Survey held at Sunderland Date, First Survey 23rd Oct. Last Survey 28th Nov. 1936
Reg. Book. Supp. (Number of Visits.....)

89/22 on the S. S. "Llaneshe" Tons { Gross 4820 4836
Net 3000 2911

Built at Sunderland By whom built Bartram & Sons Ltd. Yard No. 273 When built 1936

Owners Clarissa Radcliffe S. S. Co. Ltd. Port belonging to London

Electric Light Installation fitted by Bartram & Sons Ltd. Contract No. 273 When fitted 1936

Is the Vessel fitted for carrying Petroleum in bulk No.

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, 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, 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 micanite or other non-hygroscopic insulating material, and the slab similarly insulated from its framework —

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 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 mains; S.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 —

Instruments on main switchboard One ammeters One

voltmeter — 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 F lamps coupled to F through 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 —

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 *Twin* 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 *5.0 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 — **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 lavatories lead covered or run in conduit *Yes*

Support and Protection of Cables, state how the cables are supported and protected *Main cables in engine room V.I.R. & braided L.C.A. slipped up; twin deck cables in heavy gauge conduit; lead covered cables in accom.*

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 *No cables or fittings in ref. chamber*

Joints in Cables, state if any, and how made, insulated, and protected *None made*

Watertight Cables 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 *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**

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 —

—, how are the cables led

where are the controlling switches situated —

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 —, whether fixed or portable —, are their fittings as per Rule —

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 — are all fuses of the filled cartridge type — are they of an approved type —

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

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.	Ampères.	Revs. per Min.		Fuel Used.	Flash Point of Fuel.
MAIN ...	1	12.5	110	114	550	Steam Engine		
AUXILIARY ...						Single cylinder		
EMERGENCY ...						open type.		
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	.1	19	.083	114	118	9	V.I.R.	L.C.A. Single Core
EQUALISER CONNECTIONS ...									
AUXILIARY GENERATOR ...									
EMERGENCY GENERATOR ...									
ROTARY TRANSFORMER MOTOR GENERATOR ...									
ENGINE ROOM ...	1	.01	7	.044	9	31	240	5°	L.C.A. Twin
BOILER ROOM ...									
AUXILIARY SWITCHBOARDS ...									
ACCOMMODATION Midship ...	1	.01	7	.044	20	31	300	5°	5°
Eng. & aft. accom. ...	1	.01	7	.044	15	31	340	5°	5°
Cargo lights ...	1	.01	7	.044	20	31	280	5°	5°
WIRELESS ...	1	.01	7	.044	12	31	300	5°	5°
SEARCHLIGHT ...	1	.002	3	.029	0.4	7.8	240	5°	In heavy gauge conduit
MASTHEAD LIGHT ...	1	.002	3	.029	0.4	7.8	80	5°	L.C.A. B
SIDE LIGHTS ...	1	.002	3	.029	0.4	7.8	24	5°	5°
COMPASS LIGHTS ...	1	.002	3	.029	0.4	7.8	330	5°	In heavy gauge conduit
STEER LIGHTS ...	1	.0017	40	.0076	1.8	5	20	5°	Cab type
CARGO LIGHTS cluster ...	1	.0017	40	.0076	2.7	5	40	5°	5°
FLOOD LAMP ...									
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 ...	1	1	.0225	7	.064	46	46	40	V.I.R.	L.C.A. Twin
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 ...	1	1	.01	7	.044	24	31	40	5°	5°
WORKSHOP MOTOR ...										
VENTILATING FANS ...	1	1	.007	7	.036	12	24	40	5°	5°
Oil Separator	1	1	.01	7	.044	12	31	300	5°	5°
Refrigerator										

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 AND ON BEHALF OF
BARTRAM and BONS LTD.

Bartram and Bons

Electrical Engineers.

Date 23rd Nov 1936

Ship Builders

COMPASSES.

Distance between electric generators or motors and standard compass 120 feet

Distance between electric generators or motors and steering compass 112 feet

The nearest cables to the compasses are as follows:—

A cable carrying 4 Ampères on the feet from standard compass 8 feet from steering compass.

A cable carrying 4 Ampères 8 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

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 AND ON BEHALF OF
BARTRAM and BONS LTD.

Bartram and Bons

Builder's Signature.

Date 23rd Nov '36

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 has been

fitted out under special survey. The materials used and the workmanship are good. On completion the dynamo, governor, main board, fusio, cables, motors and fittings were examined and tested under working conditions and found satisfactory. The insulation resistance was found good. This vessel is eligible in my opinion for notation E.S.D and O.F.

Total Capacity of Generators 12.5 Kilowatts.

The amount of Fee ... £ 13 : - : 19th Nov 1936

Travelling Expenses (if any) £ : : 31.12.36 11/1/37

S. J. Santison

Surveyor to Lloyd's Register of Shipping.

Committee's Minute FRI. 18 DEC 1936

Assigned See minute on F.E. 11/1