

REPORT ON ELECTRIC FITTINGS

(OTHER THAN FOR THE PROPULSION OF THE VESSEL) WED. JUN. 18 1924
Received at London Office

Date of writing Report 10.6.24 When handed in at Local Office 16.6.24 Port of GLASGOW.

No. in Survey held at GLASGOW Date, First Survey 23.5.24 Last Survey 10.6.1924
Reg. Book. (Number of Visits 4)

32291. on the S.S. BULHAN Tons { Gross 1024 Net 449

Built at LINTHOUR By whom built A. STEPHEN & SON Yard No. 503 When built 1924

Owners P&O ST. NAX. CO. LTD Port belonging to

Electric Light Installation fitted by MESSRS A. STEPHEN & SON LTD Contract No. 503 When fitted 1924

System of Distribution DIRECT CURRENT. EARTH RETURN ✓
Pressure of supply for Lighting 105 VOLTS ✓ volts, Heating _____ volts, Power _____ volts.

Direct or Alternating Current, Lighting DIRECT ✓ Power _____

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 NO, 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 IN ENGINE ROOM. 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 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 Board, where placed BESIDE THE GENERATORS.

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, 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 MAIN GENERATORS:— 1 S.P. FUSE & 1 S.P. SWITCH, EACH CIRCUIT 1 S.P. FUSE & 1 S.P. SWITCH.

Instruments on main switchboard TWO ammeters TWO 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 _____

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 2 VOLTS

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 FITTED

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 LEAD COVERED, LEAD COVERED ARM & BRAIDED SECURED BY BRASS & GALVANIZED CLIPS, BRASS SCREWS

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 OR LEAD

Earthing Connections, state what earthing connections are fitted and their respective sectional areas EACH GENERATOR, LARGE BRASS SOCKET BOLTED TO HULL (CABLE SIZE 12/085, EFFECTIVE AREA 1) A BRASS PLATE AT FRAME 52 ON MAIN DECK FOR ALL CABLES GOING FORWARD

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 NONE

Navigation Lamps, are these separately wired YES, controlled by separate switch and separate fuses YES, are the fuses double pole SINGLE POLE, 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 NO, 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 NONE FITTED IN THESE POSITIONS, are any fittings placed in spaces where inflammable or explosive dust or gases are liable to be present, if so, how are they protected NONE, how are the cables led NONE

where are the controlling switches situated NONE

Searchlight Lamps, No. of 2, whether fixed or portable YES, are their fittings as per Rule YES

Arc Lamps, other than searchlight lamps, No. of 2, 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 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 YES, if not of this type, state distance of the combustible material horizontally or vertically above the motors NONE and NONE

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 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

If portable lamps for use in dangerous spaces are supplied, are they of a type approved by the Home Office 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	2	5.25	105	50	STEAM ENGINE			
AUXILIARY								
EMERGENCY								
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. Ampères.	Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED.
				No.	Diameter.				
	MAIN GENERATOR	1	0.036	12	0.02	60	10	V.I.R.	LEAD, ARM & BRAIDED
	AUXILIARY GENERATOR		0.036						
	EMERGENCY GENERATOR								
	ROTARY TRANSFORMER								
	AUXILIARY SWITCHBOARDS								
	ENGINE ROOM	1	0.014	7	0.04	106	6	V.I.R.	LEAD, ARM & BRAIDED
	BOILER ROOM								
	NAVIGATION	2	"	7	0.04	6	168	"	"
	OFFICERS	2	"	7	0.04	6	168	"	"
	GREEN ROOM	2	"	7	0.04	6	240	"	"
	" AFT	1	"	7	0.04	6	90	"	"
	AMIDSHIPS	1	0.01	7	0.03	7.5	30	"	"
	CAISS	1	0.01	7	0.04	28	30	"	"
	" FORWARD	2	"	7	0.04	13.7	120	"	"
	WIRELESS								
	SEARCHLIGHT								
	MASTHEAD LIGHT	2	0.019	3	0.029	0.6	216	"	"
	SIDE LIGHTS	2	0.019	3	0.029	0.6	82	"	LEAD COVERED
	COMPASS LIGHTS	2	0.019	3	0.029	0.6	40	"	"
	POOP LIGHTS								
	CARGO LIGHTS FORWARD	2	0.019	3	0.029	4.6	180	"	LEAD, ARM & BRAIDED
	ARC LAMPS AFT	1	0.019	3	0.029	4.6	48	"	"
	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								
	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								
	WORKSHOP MOTOR								
	VENTILATING FANS								

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.

Alexander Stephen & Sons Ltd.

Electrical Engineers.

Date 13/6/24

COMPASSES.

Distance between electric generators or motors and standard compass 69 FEET
 Distance between electric generators or motors and steering compass 64 FEET

The nearest cables to the compasses are as follows:—

A cable carrying 6 Ampères 2 feet from standard compass 8 feet from steering compass. DOUBLE WIRE
 A cable carrying 2 Ampères 1 feet from standard compass 1 feet from steering compass. " "
 A cable carrying 2 Ampères 1 feet from standard compass 1 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 NO degrees on ANY course in the case of the standard compass, and NO degrees on FOR ANY course in the case of the steering compass.

ALEXANDER STEPHEN & SONS, LIMITED.

J.W. Smol

Secretary's Signature.

Date 13/6/24.

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.)

This installation has been fitted on board under special survey. Tested under full working conditions and found satisfactory. The workmanship was found to be good and sound.

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

J.S. Rankin
19/6/24

Total Capacity of Generators 10.5 Kilowatts.

The amount of Fee ... 10.00

When applied for, 17 JUNE 1924

Travelling Expenses (if any) £

When received, 19

J.S. Rankin

Surveyor to Lloyd's Register of Shipping.

Committee's Minute

GLASGOW

17 JUN 1924

FRI 12 SEP 1924

Assigned

Elec. light.

Im. 22. Transfer. (The Surveys are requested not to write on or below the space for Committee's Minute.)

AC-16.6.24