

REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office.....

9 MAY 1928

Date of writing Report 19.4.1928 When handed in at Local Office 5.5.1928 Port of GLASSGOW.

No. in Survey held at GLASSGOW. Date, First Survey 16.4.28 Last Survey 25.4.1928
Reg. Book. (Number of Visits.....6.....)

40413 on the M.V. ELSA. Tons { Gross 5381 Not

Built at GLASSGOW. By whom built BARCLAY CURLE & CO Yard No. 619 When built 1928

Owners MESSRS H. BORTHEN. Port belonging to

Electric Light Installation fitted by MESSRS BARCLAY CURLE & CO LTD Contract No. 619 When fitted 1928

System of Distribution TWO WIRE INSULATED. ✓
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 YES. ✓, 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 IN 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 IN 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 micanite 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 EACH GENERATOR

PROTECTED BY D.P. AUTOMATIC CIRCUIT BREAKER, HAVING OVERLOAD AND REVERSE CURRENT TRIPS, AND INTER-LOCKED EQUALISING SWITCH - EACH OUTGOING CIRCUIT HAVING D.P. SWITCHES AND D.P. FUSES.

Instruments on main switchboard THREE ammeters THREE 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.

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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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 2 VOLTS + 5%.

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 -

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 CABLES BY BRASS CUPS AND BRASS SCREENS. L.C.A & B CABLES BY GALVANISED IRON CLIPS & R.H. IRON SCREENS.

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, 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 NONE.

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 FIBRE.

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 -410.

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 NONE

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 PUMP ROOMS.

GASTIGHT FITTINGS HAVING STOUT DOUBLE GLASSES. how are the cables led IN GASTIGHT TUBING.

where are the controlling switches situated OUTSIDE PUMP ROOMS.

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 - WHERE POSSIBLE.

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 -

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	21	110	190	300	OIL ENGINE	DIESEL OIL.	ABOVE 150° F.
AUXILIARY ...	1	12.5	110	110	600	STEAM ENGINE.	-	-
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. Amperes.	Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED.
				No.	Diameter.				
	MAIN GENERATORS ...	2	.24650	37	.095.	190	80	RUBBER	L.C.A & B.
	EQUALISER CONNECTIONS ...	1	.07592	19	.072.	95	40	"	"
	AUXILIARY GENERATOR ...	2	.10090	19	.083.	110	60	"	"
	EMERGENCY GENERATOR ...	1	.03960	19	.052	65	70	"	"
	ROTARY TRANSFORMER ...								
	AUXILIARY SWITCHBOARDS ...								
	ENGINE ROOM ...								
	BOILER ROOM ...								
	ACCOMODATION MAIN ...	2	.02214	7	.064.	20	160	RUBBER	L.C.A & B.
	AFT ...	2	.00701	7	.036	10	100	"	LEAD COVERED
	FORWARD ...	2	.01462	7	.052	18	450	"	L.C.A & B.
	NAVIGATION MAIN ...	2	.00701.	7	.036	7.5	576	"	"
	WIRELESS ...	2	.01046	7	.044	12	480	RUBBER	L.C.A & B.
	SEARCHLIGHT ...								
	MASTHEAD LIGHT ...	2	.00152	1	.044	.25	280	RUBBER	L.C.A & B.
	SIDE LIGHTS ...	2 ea	"	1	.044	.5	50	"	LEAD COVERED
	COMPASS LIGHTS ...	2 ea	"	1	.044	.5	20	"	"
	POOP LIGHTS ...	2	"	1	.044	1.5	-	"	"
	CARGO LIGHTS ...								
	ARC LAMPS ...								
	HEATERS ...								

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 ...								
	SANITARY PUMP ...								
	CIRC. SEA WATER PUMPS ...								
	CIRC. FRESH WATER PUMPS ...								
	AIR COMPRESSOR ...								
	FRESH WATER PUMP ...								
	ENGINE TURNING GEAR ...								
	ENGINE REVERSING GEAR ...								
	LUBRICATING OIL PUMPS ...	2	.00701	7	.036	20	48	RUBBER	L.C.A & B.
	OIL FUEL TRANSFER PUMP ...	1	.00455	7	.029	17	60	"	"
	WINDLASS ...								
	WINCHES, FORWARD ...								
	WINCHES, AFT ...								
	STEERING GEAR ...								
	(a) MOTOR GENERATOR ...								
	(b) MAIN MOTOR ...	1	.10090	19	.083.	85	270	RUBBER	L.C.A & B.
	WORKSHOP MOTOR ...	1	.01462	7	.052.	21	36	"	"
	VENTILATING FAN ...	1	"	7	.052.	23	134	"	"
	5 Way SECTION BOX ...	1	.19640	37	.083.	85	80	"	"
	3 " DISC " ...	1	.03960	19	.052	50	172	"	"
	2 " " " ...	1	.02240	19	.044.	35	60	"	"
	E. R. CRANE ...	1	.01046	7	.044	20	120	"	"
	BOILER BLOWER FAN ...	1	.00455	7	.029	10	116	"	"
	REFRIG. MACH. MOTOR ...	1	.03960	19	.052	55	260	"	"

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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.

H. Sully

Electrical Engineers.

Date 2/5/28.

COMPASSES.

Distance between electric generators or motors and standard compass 200 FT. (APPROX).

Distance between electric generators or motors and steering compass 200 " (").

The nearest cables to the compasses are as follows:—

A cable carrying 1 Ampères 10 feet from standard compass 8 feet from steering compass.

A cable carrying Ampères feet from standard compass 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 YES.

The maximum deviation due to electric currents was found to be — degrees on — course in the case of the standard compass, and — degrees on — course in the case of the steering compass.

H. Sully

Builder's Signature.

Date 2/5/28

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 load conditions and found satisfactory. The materials and workmanship were found to be good and sound.

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

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Total Capacity of Generators 54.5 Kilowatts.

The amount of Fee ... £ 87.19.0

When applied for, 7.5.28

Travelling Expenses (if any) £ : : 30.5.28

When received, 30.5.28

J. Rankin
Surveyor to Lloyd's Register of Shipping.

Committee's Minute GLASGOW 8-MAY 1928

Assigned Elec. Light.

1m. 127. - Transfer.
(The Surveyors are requested not to apply on or below the space for Committee's Minute.)