

REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Date of writing Report 20.3.23 19 23 When handed in at Local Office 24.3.23 Port of Glasgow Received at London Office THU MAR 29 1923

No. in Survey held at GLASGOW Date, First Survey 25th Jan 1923 Last Survey 8th Mar 1923
Reg. Book. 67074 on the S.S. COCHRANE (Number of Visits.....) 7203

Built at GLYDEBANK By whom built Messrs JOHN BROWN & CO Yard No. 597 When built 1923
Tons { Gross 3000
Net 4485

Owners LONG DONASTAR & CO LTD Port belonging to LIVERPOOL

Electric Light Installation fitted by Messrs JOHN BROWN & CO LTD Contract No. 597 When fitted 1923

System of Distribution Single wire with Hull return except Bridges which are two wire

Pressure of supply for Lighting 100 ✓ volts, Heating — volts, Power 100 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 No ✓, is an adjustable regulating resistance fitted in series with each shunt field No ✓

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 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 Boards, where placed 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 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, each dynamo is connected to the positive busbar by means of a fuse. Each outgoing circuit has a two way selector switch & S.P. fuse

Instruments on main switchboard 2 ammeters 1 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 None. System being permanently earthed on one pole

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 ✓



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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 2.98 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 no paper insulation

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 supported by clips & protected by lead cover or lead covers & armour

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 VI 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

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 lead

Earthing Connections, state what earthing connections are fitted and their respective sectional areas Dynamic by 25 sq. in. cable. Lamps by 3/8" whitworth screw

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 None

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

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 Metal guard

over glass

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

where are the controlling switches situated ✓

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

Arc 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 oil purifier 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 totally enclosed, 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 ✓

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 ✓	20 ✓	100/105 ✓	200 ✓	500	Single cylinder, 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	0.2465 ✓	37	.093	200	30	Rubber	Lead cover
	AUXILIARY GENERATOR								
	EMERGENCY GENERATOR								
	ROTARY TRANSFORMER...								
	AUXILIARY SWITCHBOARDS...								
	ENGINE ROOM Distribution	1	0.0386 ✓	19	.052	27.6	30	Rubber	Lead cover & armour
	BOILER ROOM Base	1	0.0386 ✓	19	.052	21.2	30	Rubber	Lead cover & armour
	Dist. Box Captain's Stk.	1	0.01046 ✓	7	.044	6.5	246	Rubber	Lead cover & armour
	" " Passenger Accom.	1	0.01046 ✓	7	.044	13.0	228	Rubber	Lead cover & armour
	" " Engineers "	1	0.02214 ✓	7	.064	27.9	96	Rubber	Lead cover & armour
	" " Crew Ford.	1	0.01046 ✓	7	.044	9.1	342	Rubber	Lead cover & armour
	" " Stores & Cargo	1	0.01046 ✓	7	.044	14.7	135	Rubber	Lead cover & armour
	" " Cargo Tanks Ford.	1	0.02214 ✓	7	.064	38.8	246	Rubber	Lead cover & armour
	" " " " Aft	1	0.01046 ✓	7	.044	24.4	135	Rubber	Lead cover & armour
	WIRELESS	1	0.02214 ✓	7	.064	20	450	Rubber	Lead cover & armour
	SEARCHLIGHT	1	0.00134 ✓	3	.029	1.2	876	Rubber	Lead cover & armour
	MASTHEAD LIGHT...	1	0.00134 ✓	3	.029	1.2	156	Rubber	Lead cover & armour
	SIDE LIGHTS ...	1	0.00134 ✓	3	.029	0.6	46	Rubber	Lead cover
	COMPASS LIGHTS ...	1	0.00134 ✓	3	.029	0.6	46	Rubber	Lead cover
	POOP LIGHTS	1	0.00299 ✓	3	.036	4.8	276	Rubber	Lead cover & armour
	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. 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 ...	1	0.1009 ✓	19	.083	103	45	Rubber	Lead cover & armour
	ENGINE TURNING GEAR								
	ENGINE REVERSING GEAR								
	LUBRICATING OIL PUMPS								
	OIL FUEL TRANSFER PUMP								
	WINDLASS ...								
	WINCHES, FORWARD								
	WINCHES, AFT								
	STEERING GEAR ...								
	WORKSHOP MOTOR								
	VENTILATING FANS	1	0.00299 ✓	3	.036	8.9	45	Rubber	Lead cover & armour
	Oil Purifier								

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.

John Brown & Company, Limited.

Electrical Engineers.

Date 23rd March 1923

McInderson
Clydebank Secretary.

COMPASSES.

Distance between electric generators or motors and standard compass *Dynamo 140 feet Nearest Motor 130 feet.*

Distance between electric generators or motors and steering compass *Dynamo 130 feet Nearest Motor 120 feet.*

The nearest cables to the compasses are as follows:—

A cable carrying *9.2* Amperes *15* feet from standard compass *9* feet from steering compass.

A cable carrying *0.6* Amperes *3* feet from standard compass *3* 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 _____ course in the case of the standard compass, and *Nil* degrees on _____ course in the case of the steering compass.

John Brown & Company, Limited.

McInderson
Clydebank Secretary.

Builder's Signature.

Date 23rd March 1923

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 in every way.
The workmanship was found to be good
and sound.*

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

W.D.
14/4/23

Total Capacity of Generators *40* Kilowatts

The amount of Fee ... £ *25 0 0* *19.3.23*

Travelling Expenses (if any) £ : : *24.3.23 J.M.A.*

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

Committee's Minute *GLASGOW 28 MAR 1923*

Assigned

Elec. Light.

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