

# REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL) WFD. 10 JAN. 1923

Received at London Office

Date of writing Report 19 When handed in at Local Office 8. 1. 1922 Port of Glasgow

No. in Survey held at GLASGOW Date, First Survey 21. 11. 22 Last Survey 13. 12. 1922  
Reg. Book. (Number of Visits 5)

65856 on the "M. V. LOCHGOIL" Tons { Gross 9500  
Net

Built at GOVAN By whom built MESSRS HARLAND & WOLFF Yard No. 516 C When built

Owners ROYAL MAIL STEAM PACKET CO. Port belonging to LONDON.

Electric Light Installation fitted by MESSRS HARLAND & WOLFF LTD Contract No. 516 C When fitted 1922.

System of Distribution 220 Volt Direct Current Double Wire

Pressure of supply for Lighting 220 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 Port side of Main 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 On Platform at After end of Main 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. Same Compartment

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 500 Amp. D.P. switches

and D.P. Circuit Breakers for each Generator. D.P. Q.B. switches with 2 D.P. Cartridge

fuses for each outgoing circuit. For equalizing a D.P. 500 amp switch, is interlocked with each 500 amp.

circuit breaker

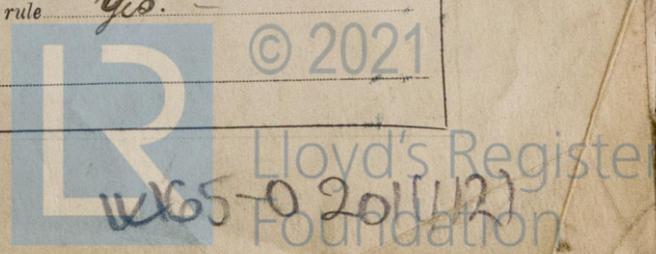
Instruments on main switchboard 4 ammeters 2 voltmeters — synchronising device for paralleling purposes.

Earth Testing, state what means are provided at the main switchboard for indicating the state of the insulation of the system Two lamps with

switch & fuses wired in series mid point between lamps earthed

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.



*Single L.C.*  
*L.S.A.B.*  
 Insulation of Cables, state type of cables, single or twin *L.S.A.B.* 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 *21 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  
 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 *Clipped direct to wood bulkheads and on perforated plating elsewhere except Main Deck run which is in sheet iron troughing*  
 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 *No lights fitting*  
 Joints in Cables, state if any, and how made, insulated, and protected *Jointing of L.C. and L.S.A.B. cables made in special joint box each cable over .004 sq. in. section having a separate sweating terminal*  
 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 *All portable gear having metallic handles and radiators earthed with #10 copper wire*  
 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 fitted*  
 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 *Yes in bonded store. Special Admiralty Pattern Magazine Fitting Installed*, how are the cables led *conduit*  
 where are the controlling switches situated *outside*  
 Searchlight Lamps, No. of *—*, whether fixed or portable *—*, are their fittings as per Rule *—*  
 Arc 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 axis of rotation fore and aft *majority 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 *—* 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 ...	4	100	220	454	300	Diesel Engine	Persian	Open 208° F. Closed 183° F.
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. Amperes.	Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED.
				No.	Diameter.				
	MAIN GENERATOR...	3±	.75	91	.103	454	200	Rubber	Braided & Fireproof.
	AUXILIARY GENERATOR								
	EMERGENCY GENERATOR								
	ROTARY TRANSFORMER...								
	AUXILIARY SWITCHBOARDS								
	ENGINE ROOM Port.	2	.007	7	.036	11.9	280	Rubber	L.S.A.B.
	BOILER ROOM Star.	2	.007	7	.036	12.0	280	"	"
	Navigation	2	.007	7	.036	10.8	480	"	"
	Lighting Ford.	2	.022	7	.064	16.3	400	"	"
	" Mid & aft	2	.022	7	.064	20.5	210	"	"
	Cargo	2	.100	19	.083	75.0	300	"	"
	Heating Ford	2	.075	19	.072	86.0	400	"	"
	" Aft	2	.100	19	.083	117.0	200	"	"
	Cooking	2	.200	37	.083	180.0	400	"	"
	WIRELESS ...	2	.007	7	.036	6.5	220	Rubber	Lead Covered
	SEARCHLIGHT ...	2	.060	19	.064	80.0	750	"	"
	MASTHEAD LIGHT...	2	.003	3	.036	.6	360	"	"
	SIDE LIGHTS...	2	.003	3	.036	.6	90	"	"
	COMPASS LIGHTS ...	2	.003	3	.036	.3	30	"	"
	POOP LIGHTS ...	2	.003	3	.036	.26	80	"	"
	CARGO LIGHTS ...	3	.007	90	.0076	4.5	170	"	None Braided
	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.				
1	BALLAST PUMP ...	1	.075	19	.072	88	120	Rubber	L.S.A.B.
2	MAIN BILGE LINE PUMPS ...	2	.075	19	.052	64	300	"	"
	GENERAL SERVICE PUMP								
	EMERGENCY BILGE PUMP								
1	SANITARY PUMP ...	1	.120	37	.064	120	240	"	"
1	CIRC. SEA WATER PUMPS ...	1	.120	37	.064	120	240	"	"
	CIRC. FRESH WATER PUMPS								
2	AIR COMPRESSOR ...	1	1.00	122	.103	500	420	"	Braided & Fireproof.
1	FRESH WATER PUMP ...	1	.0070	7	.036	14	120	"	L.S.A.B.
1	ENGINE TURNING GEAR	2	.060	19	.064	116	150	"	"
	ENGINE REVERSING GEAR								
3	LUBRICATING OIL PUMPS ...	2	.060	19	.064	116	150	"	"
1	OIL FUEL TRANSFER PUMP	1	.014	7	.052	32	180	"	"
1	WINDLASS ...	1	.400	74	.083	380	200	"	"
6	WINCHES, FORWARD ...	6	.500	74	.093	340	650	"	"
9	WINCHES, AFT ...	9	.600	74	.103	390	150	"	"
1	STEERING GEAR ...	1	.200	37	.083	132	450	"	"
1	WORKSHOP MOTOR Lathe...	1	.003	3	.036	6	80	"	"
1	VENTILATING FANS 12 A.P.	2	.075	19	.072	88	350	"	"
2	602 Compressors	1	.400	37	.083	168	300	"	"
3	Brine Pumps	2	.060	19	.064	80	280	"	"
1	Oil Purifier	1	.0030	3	.036	8	100	"	"
4	Stanlock Heaters	1	.0050	3	.036	2	100	"	"
1	Drilling Machine	1	.0050	3	.036	8	100	"	"
2	25' Vent Fan.	1	.0070	7	.036	19	80	"	"

This column gives the total number of motors on each circuit  
 The numbers in this column give the total number of each kind of motor

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.

FOR HARLAND & WOLFF, LTD.

*John Dickinson*

Electrical Engineers.

Date 29th Dec 1922

Managing Director.

COMPASSES.

Distance between electric generators or motors and standard compass 95 ft.

Distance between electric generators or motors and steering compass 95 ft.

The nearest cables to the compasses are as follows:—

A cable carrying 10.8 Ampères 10 feet from standard compass 6 feet from steering compass.

A cable carrying 6 Ampères 8 feet from standard compass 8 feet from steering compass.

A cable carrying 3 Ampères 6 feet from standard compass 6 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 the* course in the case of the standard compass, and *nil* degrees on *all the* course in the case of the steering compass.

FOR HARLAND & WOLFF, LTD.

*John Dickinson*

Builder's Signature.

Date 29th Dec 1922

Managing Director.

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

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

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

*Elec. Light*  
*A.M.D.*  
*26/1/23*

Total Capacity of Generators *400* Kilowatts

The amount of Fee ... £ *11* : *10* : *18.12.22*

Travelling Expenses (if any) : £ : *22.12.22*

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

Committee's Minute **GLASGOW** *9 JAN 1923*

Assigned *Elec. Light*

Im 423 - Transfer.  
(The Surveys are requested and to verify on or below the space for Committee's Minute.)



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