

REPORT ON ELECTRICAL EQUIPMENT.

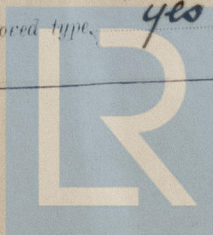
(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office

AUG 25 1937

Date of writing Report 17-8-37 When handed in at Local Office 24-8-37 Port of Glasgow
 No. in Survey held at Glasgow Date, First Survey 26-7-37 Last Survey 13-8-1937
 Reg. Book. 33064 on the MV. "SALACIA" Tons { Gross 5495 Net 3286
 Built at Govan By whom built Harland and Wolff. Yard No. 928 G. When built 1937
 Owners The Donaldson Line Ltd Port belonging to Glasgow
 Electric Light Installation fitted by Harland and Wolff Contract No. 982 G. When fitted 1937
 Is the Vessel fitted for carrying Petroleum in bulk No

System of Distribution Two wire 110 volts, Heating 110 volts, Power 110 volts.
 Pressure of supply for Lighting 110 direct Power direct
 Direct or Alternating Current, Lighting 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 no, 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 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 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 near generators on special platform
 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 SINDANYO, 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, 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
 main generators each have a two pole circuit breaker. The aux generator and each outgoing circuit has a D.P. linked switch and D.P. fuses.
 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 yes
 Instruments on main switchboard three ammeters two
 voltmeters 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
 earth lamps
 do these comply with the requirements of the Rules yes, are the fusible cutouts of an approved type yes, have the reversed



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current protection devices been tested under working conditions yes ✓ **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 single and 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 4.9 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 clipped to steel truss, the bulkhead or wood ground **Mains lead covered and armoured; accommodation lead covered** ✓ 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 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 lead ✓ **Earthing Connections**, state what earthing connections are fitted and their respective sectional areas cables have their own and armoring efficiently bonded by means of clips ✓ 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 — **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 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 — and — if not of this type, state distance of the combustible material horizontally or vertically above the motors — **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 fitted 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.	Amps.	Revs. per Min.		Fuel Used.	Flash Point of Fuel.
MAIN	2	74	110	700	600	Steam engine		
AUXILIARY	1	13½	110	122	621	Steam engine		
EMERGENCY								
ROTARY TRANSFORMER								

GENERATOR, LIGHTING AND HEATING CONDUCTORS.

DESCRIPTION.	CONDUCTORS.		COMPOSITION OF STRAND.		TOTAL MAXIMUM CURRENT. AMPERES.		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	2	1.2	91	.093	700	768	58	V.I.R.	L.S.A.B.
EQUALISER CONNECTIONS									
AUXILIARY GENERATOR	1	.15	37	.072	122	152	68	"	"
EMERGENCY GENERATOR									
ROTARY TRANSFORMER									
ENGINE ROOM									
BOILER ROOM	1	.04	19	.052	54	64	60	"	"
AUXILIARY SWITCHBOARDS									
DB No. 11 AFT LCT.	1	.01	7	.044	16	31	465	"	"
DB No. 1 NAVIGATION	1	.01	7	.044	16	31	320	"	"
FAN SWITCHBOARD No. 2 HOLD	1	.25	37	.093	212	214	285	"	"
FAN SWITCHBOARD No. 3 HOLD	1	.25	37	.093	212	214	285	"	"
No. 3 FAN S.B.	1	.0225	17	.064	37	46	54	"	"
ACCOMMODATION									
No. 1 S.B.	1	.06	19	.064	81	83	132	"	"
CARGO LCT. No. 2 S.B.	1	.10	19	.083	97	118	54	"	"
ENGINE ROOM AUX.	1	.06	19	.064	104	83	120	"	"
WIRELESS	1	.0145	7	.052	33	37	312	"	"
SEARCHLIGHT									
MASTHEAD LIGHT	1	.012	3	.029	36	7.8	480	"	"
SIDE LIGHTS									
COMPASS LIGHTS	1	.002	3	.029	18	7.8	16	"	"
POOP LIGHTS									
CARGO LIGHTS									
ARC LAMPS									
HEATERS									

MOTOR CONDUCTORS.

DESCRIPTION.	No. of Motors.	CONDUCTORS.		COMPOSITION OF STRAND.		TOTAL MAXIMUM CURRENT. AMPERES.		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	.06	19	.064	80	83	120	V.I.R.	L.S.A.B.
ENGINE TURNING GEAR	2	1	.01	7	.044	26	31	48	"	"
FUEL OIL PURIFIER	1	1	.007	7	.036	22	24	105	"	"
LUB. OIL PURIFIER	1	1	.01	7	.044	26	31	40	"	"
HALL MARK COMPRESSOR	1	1	.003	3	.036	9.6	12	40	"	"
HALLMARK PUMP										
WINCHES, FORWARD										
WINCHES, AFT										
STEERING GEAR										
(a) MOTOR GENERATOR	1	1	.0045	7	.029	17	18.2	98	"	"
(b) Main Motor	2	1	.0045	7	.029	14	18.2	120	"	"
WORKSHOP MOTOR	2	1	.0045	7	.029	14	18.2	160	"	"
VENTILATING FANS ENG. ROOM	2	1	.075	19	.072	85	97	146	"	"
REFRIG. HOLD FANS	4	1	.04	19	.052	63	64	120	"	"

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 HARLAND AND WOLFF, LIMITED

Ryselen

Govan Secretary

Electrical Engineers.

Date 20th Aug 1937

COMPASSES.

Distance between electric generators or motors and standard compass

20 feet to Wireless Motor Generator

Distance between electric generators or motors and steering compass

16 feet

The nearest cables to the compasses are as follows:—

A cable carrying 18 Ampères led into feet from standard compass led into feet from steering compass.

A cable carrying 16 Ampères 10 feet from standard compass 8 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 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 AND WOLFF, LIMITED

Ryselen

Builder's Signature.

Date 20th Aug 1937

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, etc.)

The electrical equipment of this

vessel has been fitted on board under special survey, tested under full working condition & found satisfactory. The material and workmanship are good.

23/8/37

Noted.

has 26/8/37

7500336.—Transfer.
The Surveyors are requested not to write on or below the space for Committee's Minute.

Total Capacity of Generators 167½ Kilowatts.

The amount of Fee ... £ 39 : 5 : 0

When applied for,

23 AUG 1937

Travelling Expenses (if any) £

When received,

39 : 5 : 0

Committee's Minute GLASGOW 24 AUG 1937

Assigned SEE ACCOMPANYING MACHINERY REPORT.

for R.I. Murchison & self. H. Haffner

Surveyors to Lloyd's Register of Shipping.



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