

Rpt. 13.

No. 61311

# REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office.....

Date of writing Report 28-6-1939. When handed in at Local Office 10:7:1939 Port of Glasgow

No. in Survey held at Dumbarton Date, First Survey 23:11:38 Last Survey 27-6-1939

Reg. Book. 89596 on the T.S.M.V. "PRINCESS VICTORIA" (Number of Visits.....) Tons {Gross 2197 Net 1032

Built at Dumbarton By whom built Wm Deumy & Bros Ltd. Yard No. 1333 When built 1939.

Owners L. M. S. Railway Port belonging to Stranraer

Electric Light Installation fitted by Wm. Deumy & Bros Ltd. Contract No. 1333. When fitted 1939

Is the Vessel fitted for carrying Petroleum in bulk No.

System of Distribution two wire

Pressure of supply for Lighting 110 volts, Heating 110 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

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 near 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, 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 micaite or other non-hygroscopic insulating material, and the slab similarly insulated from its framework sindampo

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

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

controlled by T.P. circuit breaker fitted with O/P and R/C trips; each outgoing circuit controlled by D.P. switch and fuses.

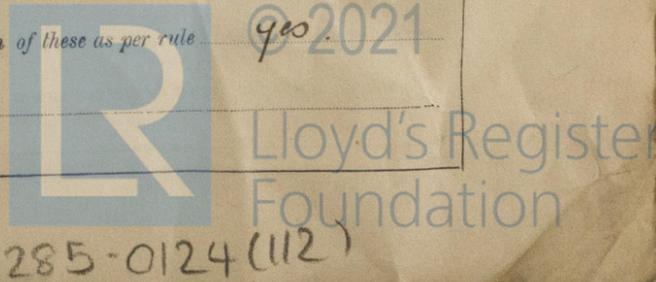
Instruments on main switchboard 3. ammeters 2. voltmeters - synchronising device for paralleling purposes.

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

meter.

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



W285-0124(112)

**Cables:** Single, twin, concentric, or multicore single twin 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 5.2 Volts.

**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 L.C.B. cables clipped.

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 —

**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 leadsheath efficiently earthed & bonded by means of clips or glands.  
are their connections made as per Rule —

**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 generator situated in special compartment on main deck, controlled by run switchboard, driven by I.C. engine.

**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 —

**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, 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 —

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.	Amps.	Revs. per Min.		Fuel Used.	Flash Point of Fuel.
MAIN	3	110	110	1000	550	I.C. Engine.	oil	above 150° F
AUXILIARY	1	14	110	127	1000	I.C. Engine.	oil	above 150° F
EMERGENCY	1							
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 Effective Area per Pole Sq. Ins.	No.	Diameter.	In Circuit.	Rule.				
MAIN GENERATOR	2	1.7	127	.093	1000	1024	80	Rubber	L.C.B.	
EQUALISE CONNECTIONS	1	.85	127	.093	—	512	40	"	"	
AUXILIARY GENERATOR	1	.15	37	.072	127	152	60	"	"	
EMERGENCY GENERATOR	1	.01	7	.044	28.5	31	40	"	"	
TRANSFORMER	1	.03	19	.044	50	53	100	"	"	
ENGINE ROOM. (DB.1)	1	.003	3	.036	9	12	40	"	"	
BOILER ROOM. (DB.2)	1	.003	3	.036	10	12	60	"	"	
AUXILIARY SWITCHBOARDS	1	.1	19	.083	116	118	200	"	"	
SECTION BOARD A.	1	.03	19	.044	48.6	53	60	"	"	
E.R. AUX No 1.	1	.06	19	.064	40	83	220	"	"	
OFFICERS' RADIATORS	1	.075	19	.072	68	97	240	"	"	
CREWS' RADIATORS	1	.06	19	.064	68	83	260	"	"	
NAVIGATION & BRIDGE	1	.04	19	.052	60	64	190	"	"	
FORWARD VENT FAN DB	1	.03	19	.044	48	53	280	"	"	
AFT VENT. FAN DB.	1	.06	19	.064	80	83	190	"	"	
GALLEY AUX. DB.	1	.075	19	.072	91	97	150	"	"	
GALLEY AUX. AFT. DB.	1	.2	37	.083	175	184	160	"	"	
E.R. UNITS. DB.	1	.0045	7	.029	15	18.2	90	"	"	
WIRELESS	1	.002	3	.029	36	7.8	250	"	"	
SEARCHLIGHT	1	.002	3	.029	36	7.8	60	"	"	
MASTHEAD LIGHT	1	.002	3	.029	2	7.8	20	"	"	
SIDE LIGHTS	1	.002	3	.029	2	7.8	20	"	"	
COMPASS LIGHTS	1	.002	3	.029	2	7.8	20	"	"	
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 Effective Area per Pole Sq. Ins.	No.	Diameter.	In Circuit.	Rule.				
SPRINKLER	1	1	.3	37	.103	281	240	100	Rubber	L.C.B.	
FRESH WATER PUMP	1	1	.06	19	.064	82	83	100	"	"	
MAIN DISCH. LINE PUMPS	2	1	.06	19	.064	82	83	100	Rubber	L.C.B.	
GENERAL SERVICE PUMP	1	1	.08	19	.064	75	83	60	"	"	
EMERGENCY BILGE PUMP	1	1	.06	19	.064	83	83	100	"	"	
SANITARY PUMP	1	1	.06	19	.064	83	83	100	"	"	
CIRC. SEA WATER PUMPS	2	1	.15	37	.072	144	152	200	"	"	
CIRC. FRESH WATER PUMPS	2	1	.15	37	.072	125	152	120	"	"	
AIR COMPRESSOR	2	1	.5	61	.103	325	332	220	"	"	
FRESH WATER PUMP	1	1	.03	19	.044	27	53	120	"	"	
ENGINE TURNING GEAR	2	1	.03	19	.044	49	53	100	"	"	
LUB. OIL PURIFIER	1	1	.0045	7	.029	18.2	120	120	"	"	
ENGINE REVERSING GEAR	3	1	.3	37	.103	205	240	140	"	"	
LUBRICATING OIL PUMPS	2	1	.07	7	.036	20	24	60	"	"	
OIL FUEL TRANSFER PUMP	1	1	.3	37	.103	218	240	200	"	"	
WINDLASS	1	1	.15	37	.072	134	152	320	"	"	
BOAT HOIST	1	1	.3	37	.103	218	240	400	"	"	
WINCHES FORWARD	1	1	.3	37	.103	218	240	400	"	"	
CAPTAIN FORWARD	1	1	.3	37	.103	218	240	400	"	"	
WINCHES, AFT	2	1	.3	37	.103	218	240	500	"	"	
CAPTAIN, AFT	2	1	.3	37	.103	218	240	500	"	"	
STEERING GEAR	1	1	.1	19	.083	86	118	400	"	"	
(a) MOTOR	1	1	.1	19	.083	86	118	460	"	"	
(b) MAIN MOTOR	1	1	.1	19	.083	86	118	460	"	"	
WORKSHOP MOTOR											
VENTILATING FANS											
AUX. S.W. COILING	2	1	.0045	7	.029	17	18.2	90	"	"	
SUPPLY FANS	4	1	.0045	7	.029	13.2	18.2	140	"	"	
EXH. FANS	4	1	.002	3	.029	7.25	7.8	140	"	"	
VENT. FANS	3	1	.003	3	.036	10.3	12	20	"	"	
REFRIG.	1	1	.007	7	.036	18	24	40	"	"	

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 WILLIAM DENNY & BROTHERS Limited

*W. Russell*

Director.

Electrical Engineers.

Date

*1/7/39*

COMPASSES.

Distance between electric generators or motors and standard compass *65 feet*  
 Distance between electric generators or motors and steering compass *60 feet*  
 The nearest cables to the compasses are as follows:—  
 A cable carrying *2* Ampères *6* inches feet from standard compass *6* inches feet from steering compass.  
 A cable carrying *9* Ampères *12* 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 *any* course in the case of the standard compass, and *nil* degrees on *any* course in the case of the steering compass.

For WILLIAM DENNY & BROTHERS Limited

*W. Russell*

Director

Builder's Signature.

Date

*1/7/39*

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.) *The electrical equipment of this vessel has been fitted on board under special survey, tested under full working conditions and found satisfactory. The materials and workmanship are good.*

*Rob*  
*10/7/39*

*Noted*  
*17/7/39*

Total Capacity of Generators *344* Kilowatts.

The amount of Fee  $\left. \begin{matrix} \text{£} 49 : 14 : \\ \text{£} 39 : 15 : 0 \end{matrix} \right\} \begin{matrix} \text{When applied for,} \\ 7 : 7 : 19 : 39 \\ \text{When received,} \\ 29 : 8 : 19 : 39 \end{matrix}$

Travelling Expenses (if any) £ *4 : 5/6* LONDON.

*R. I. Hutchison*  
Surveyor to Lloyd's Register of Shipping.

Committee's Minute **GLASGOW 11 JUL 1939**

Assigned SEE ACCOMPANYING MACHINERY REPORT.

Im. 9. 30. — Transfer. (The Surveys are requested not to write on or below the space for Committee's Minute.)



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