

# REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

27 FEB 1934

Received at London Office.....

Date of writing Report 17<sup>th</sup> Feb<sup>y</sup> 1934, When handed in at Local Office 26<sup>th</sup> Feb<sup>y</sup> 1934 Port of DundeeNo. in Survey held at Dundee Date, First Survey 21<sup>st</sup> Dec 1933 Last Survey 21<sup>st</sup> Feb<sup>y</sup> 1934  
Reg. Book. (Number of Visits.....12.....)39314, on the s/s "DUNDEE" Tons { Gross 1540.73  
Net 624.94.Built at DUNDEE By whom built THE CALEDON SHIP<sup>g</sup> & ENG<sup>g</sup> CO<sup>LD</sup> Yard No. 345 When built FEB. 1934

Owners THE DUNDEE PERTH &amp; LONDON SHIPPING CO Port belonging to DUNDEE

Electric Light Installation fitted by THE MARCONI INT. MAR. COMM. COY<sup>LD</sup> Contract No. 345 When fitted FEB. 1934

Is the Vessel fitted for carrying Petroleum in bulk NO

System of Distribution TWO CONDUCTOR, INSULATED, DISTRIBUTION BOX SYSTEM

Pressure of supply for Lighting 110 volts, Heating 110 volts, Power — volts.

Direct or Alternating Current, Lighting DIRECT CURRENT Power —

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. NO, 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 ENGINE ROOM, BOTTOM PLATFORM, STARBOARD

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 ENGINE ROOM, BOTTOM PLATFORM, STARBOARD

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. NO EQUALIZER SWITCHES

DOUBLE POLE SWITCHES &amp; DOUBLE POLE FUSES FOR EACH GENERATOR

DOUBLE POLE CHANGE OVER SWITCH &amp; DOUBLE POLE FUSES FOR EACH OUTGOING CIRCUIT

Instruments on main switchboard 2 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. 2 EARTH LAMPS

TUMBLER SWITCH ON EACH POLE THROUGH FUSES WITH PUSH SWITCH TO EARTH

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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Lloyd's Register  
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Cables: Single, twin, concentric, or multicore SINGLE are the cables insulated and protected as per Tables IV, V, XI or XIII of the Rules YES

Fall of Pressure, state maximum between bus bars and any point of the installation under maximum load 4.3 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 MAIN CABLES CLIPPED ON STEEL TRAYS, BULKHEADS OR WOOD GROUNDS, SUB-MAINS ON STEEL TRAY OR WOOD GROUNDS, BRANCH WIRING ON WOOD GROUNDS, V.I.R. IN CASING.

If cables are run in wood casings, are the casings and caps secured by screws YES, are the cap screws of brass YES, are the cables run in separate grooves NO. 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 FIBRE & LEAD

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 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 YES, SPECIALLY ROBUST, GUARDED FITTINGS "WIGAN" TYPE USED, 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, FLAMEPROOF FITTINGS WITH GUARDS, how are the cables led SOLID DRAWN GALVANIZED SCREWED CONDUIT, where are the controlling switches situated OUTSIDE PUMP ROOMS

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 —, are the coils self-contained and readily removable for replacement —, are the brushes, brush holders, terminals and lubricating arrangements as per Rule —, are the motors placed in well-ventilated compartments in which inflammable gases cannot accumulate and clear of all inflammable material —, are they protected from mechanical injury and damage from water, steam or oil — are their axes of rotation fore and aft —, 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 —

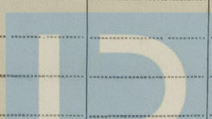
Ships carrying Oil having a Flash Point less than 150° F. Have the special requirements of the Rules been complied with regarding switches, joint boxes, section and distribution boards, protection of cables, method of distribution, lead of cables, lights and fittings YES (AT PUMP ROOMS)

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	1	18	110	164	550	VERTICAL STEAM ENGINE	-	-	
AUXILIARY	1	10	110	91	550	" " "	-	-	
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 Effective Area per Pole Sq. Ins.	No.	Diameter.	In Circuit.	Rule.			
MAIN GENERATOR	1	.10"	19	.083	164	172	38	VARNISHED AMBER	L.C. IN PIPING
EQUALISER CONNECTIONS									
AUXILIARY GENERATOR	1	.06"	19	.064	91	122	36	" "	" " "
EMERGENCY GENERATOR									
ROTARY TRANSFORMER									
MOTOR GENERATOR									
ENGINE ROOM	1	.007"	7	.036	22	24	30	V.I.R.	L.C. A & B.
BOILER ROOM									
AUXILIARY SWITCHBOARDS									
SHORE CONNECTION	1	.075	19	.072	90	97	100	V.I.R.	L.C. & A.B.
NAVIGATION LIGHTS	1	.0225	7	.064	16	46	300	V.I.R.	L.C. & B.
CARGO CIRCUIT	1	.06	19	.044	35	53	135	V.I.R.	L.C. A & B.
HEATERS	1	.04	19	.052	55	64	220	V.I.R.	L.C. & B.
ACCOMMODATION	1	.0225	7	.064	30	46	225	V.I.R.	L.C. & B.
	1	.0225	7	.064	14	46	90	V.I.R.	L.C. & B.
WIRELESS	1	.01	7	.044	15	31	180	V.I.R.	L.C. & B.
SEARCHLIGHT	1	.002	3	.029	.55	7.8	330	V.I.R.	L.C. & B. & L.C. A & B.
MASTHEAD LIGHT	1	.002	3	.029	.55	7.8	450	V.I.R.	" " " "
SIDE LIGHTS	1	.002	3	.029	.55	7.8	135	V.I.R.	L.C. & B.
COMPASS LIGHTS	1	.002	3	.029	.37	7.8	45	V.I.R.	L.C. & B.
POOP LIGHTS	1	.002	3	.029	.37	7.8	45	V.I.R.	L.C. A & B.
CARGO LIGHTS	1	.003	3	.036	1.1	12	345	V.I.R.	L.C. & B. & L.C. A & B.
ARC LAMPS									
HEATERS	1	.003	3	.036	4.6	12	75	V.I.R.	WOOD CASING.

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.			
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										
OIL FUEL TRANSFER PUMP										
WINDLASS										
WINCHES, FORWARD										
WINCHES, AFT										
STEERING GEAR—										
(a) MOTOR GENERATOR										
(b) MAIN MOTOR										
WORKSHOP MOTOR										
VENTILATING FANS										

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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.

THE MARCONI INTERNATIONAL MARINE  
COMMUNICATION CO. LD. (ELEC. SERVICE DEPT.)

Electrical Engineers.

Date 17/2/34

#### COMPASSES.

Distance between electric generators or motors and standard compass 87 ft.

Distance between electric generators or motors and steering compass 83 ft.

The nearest cables to the compasses are as follows:—

A cable carrying .09 Ampères ON THE feet from standard compass 8 feet from steering compass.

A cable carrying .09 Ampères 8 feet from standard compass ON THE 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.

FOR AND ON BEHALF OF  
THE CALSON SHIPBUILDING & ENGINEERING CO. LTD.

Builder's Signature.

Date 26/2/34

J. M. J. J. J.

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.)

This Installation has been efficiently fitted on board in accordance with the Rules, the materials & workmanship being sound & good. Insulation resistance tests were carried out with satisfactory results. On completion the installation was tried under full load & working conditions & was found satisfactory in every respect.

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

18/2/34

John Houston

Total Capacity of Generators 18 10 28 Kilowatts.

The amount of Fee ... £ 21 : 10 : 26/2/34

Travelling Expenses (if any) £ : : 73 19/34

John Houston  
Surveyor to Lloyd's Register of Shipping.

Committee's Minute

FRI. 2 MAR 1934

TUE 17 APR 1934

Assigned

Elec. Lt.



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