

REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL) 17 JUL 1929

Date of writing Report 15th JUNE 1929 When handed in at Local Office 15 JULY 1929 Port of LiverpoolNo. in Survey held at BIRKENHEAD Date, First Survey Apr 2nd Last Survey June 14th 1929
Reg. Book. (Number of Visits.....14.....)on the M.V. 'THORLAND CASTLE' Tons { Gross 6322
Net 3808

Built at BIRKENHEAD By whom built CAMMELL, LAIRD & CO. LTD. Yard No. 946. When built 1929.

Owners MESSRS. S. CHAMBERS & CO. LTD. Port belonging to Liverpool

Electric Light Installation fitted by SONDERLAND FORGE & ENGINE CO. LTD. Contract No. 946. When fitted 1929.

System of Distribution

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 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

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 YES. 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.

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

T.P. CIRCUIT BREAKERS FOR MAIN GENERATORS. D.P. SWITCH & FUSES FOR AUX. GENERATOR.

D.P. CIRCUIT BREAKERS. D.P. SWITCHES & FUSES FOR EACH OUTGOING CIRCUIT.

Instruments on main switchboard 5 ammeters 5 voltmeters — synchronising device for paralleling purposes.

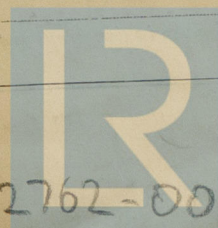
Earth Testing, state what means are provided at the main switchboard for indicating the state of the insulation of the system

EARTH LAMPS CONNECTED TO EARTH THRO' SWITCHES & FUSES.

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
Foundation

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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 5.0 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 Yes.

Cable Rungs, 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 LEAD COVERED & ARMoured & BRAIDED CABLES LAID IN STEEL CHANNELS & RUN ALONG DECK.

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 Yes. 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 None.

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 None.

Alternative Lighting, are the groups of lights in the propelling machinery space arranged as per Rule Yes. are their connections made 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.

Secondary Batteries, are they constructed and fitted as per Rule 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 Yes.

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.

how are the cables led Yes.

where are the controlling switches situated Yes.

Searchlight Lamps, No. of Yes. whether fixed or portable Yes. are their fittings as per Rule Yes.

Arc Lamps, other than searchlight lamps, No. of Yes. are their live parts insulated from the frame or case Yes. are their fittings as per Rule Yes.

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 Yes.
if not of this type, state distance of the combustible material horizontally or vertically above the motors Yes.

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 Yes.

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.

If portable lamps for use in dangerous spaces are supplied, are they of a type approved by the Home Office 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	1	110	220	500	295	RUSTON HORNBYS ENGINES.	Oil	
AUXILIARY	1	25	220	105	350			
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. Amps.	Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED.	
		No.	Diameter.	No.						
	MAIN GENERATOR...	4	2	37	0.95	500	295	160	VARNISHED CAMBRIC	L.C.B.
	EQUALISER CONNECTIONS	1	2	37	0.95	250	222	160	"	"
	AUXILIARY GENERATOR	2	0.6	19	0.64	105		220	"	"
	EMERGENCY GENERATOR									
	ROTARY TRANSFORMER...									
	AUXILIARY SWITCHBOARDS									
	ENGINE ROOM									
	BOILER ROOM									
	ACCOMMODATION									
	LIGHTING RING MAIN.	2	0.225	7	0.64	46		180	RUBBER	L.C.B.
	FORWARD HEATERS.	2	1.5	37	0.72	150		230	VARNISHED CAMBRIC	"
	AFT HEATERS.	2	1.5	37	0.72	157		180	"	"
	ENGINE PANTY GEAR	2	0.145	7	0.52	34		100	RUBBER	"
	SALOON PANTY GEAR.	2	0.145	7	0.52	22.7		230	"	"
	WIRELESS									
	SEARCHLIGHT									
	MASTHEAD LIGHT...									
	SIDE LIGHTS...									
	COMPASS LIGHTS									
	POOP LIGHTS									
	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. Amperes.	Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED.	
	BALLAST PUMP	1	1	19	0.83	102	40	RUBBER	L.C.B.
	MAIN BILGE LINE PUMPS ...								
	GENERAL SERVICE PUMP ...	1	0.4	19	0.52	48	40	"	"
	EMERGENCY BILGE PUMP ...								
	SANITARY PUMP	1	1	19	0.83	102	40	"	"
	CIRC. SEA WATER PUMPS ...	1	1	19	0.83	102	40	"	"
	CIRC. FRESH WATER PUMPS								
	AIR COMPRESSOR	2	3	2-37	0.72	450	60	VARNISHED CAMBRIC	"
	FRESH WATER PUMP								
	ENGINE TURNING GEAR ...	2	0.225	7	0.64	40	160	RUBBER	"
	ENGINE REVERSING GEAR ...								
ADLT	LUBRICATING OIL PUMPS ...	1	0.4	19	0.52	53	40	"	"
	OIL FUEL TRANSFER PUMP	1	0.4	19	0.52	53	40	"	"
	WINDLASS								
	WINCHES, FORWARD RING MAIN.	5	3	37	1.03	424	350	VARNISHED CAMBRIC	"
	WINCHES, AFT RING MAIN...	5	3	37	1.03	424	490	"	"
	STEERING GEAR—								
	(a) MOTOR GENERATOR...								
	(b) MAIN MOTOR	2	1.5	37	0.72	134	590	RUBBER	"
	WORKSHOP MOTOR	1	0.07	7	0.36	21	60	"	"
	VENTILATING FANS								
	WINCHES MUDSHIP.	4	3	37	1.03	424	120	VARNISHED CAMBRIC	"
	OIL PURIFIERS	3	0.1	7	0.44	30	10	RUBBER	"
	OIL BLOWER	1	0.07	7	0.36	18	20	"	"
	REFRIG. MACHINE	1	0.07	7	0.36	22	60.	"	"

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.

At Sunderland Forge - Eng³ C² L¹

Electrical Engineers.

Date 22-6-29

COMPASSES.

Distance between electric generators or motors and standard compass 110 FEET.

Distance between electric generators or motors and steering compass 108 FEET.

The nearest cables to the compasses are as follows:—

A cable carrying 4.27 Amperes 10 feet from standard compass 8 feet from steering compass.

A cable carrying Amperes feet from standard compass 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 2° E degrees on all courses N.E. by E. - N. by W course in the case of the standard compass, and 3° E degrees on all courses E. by S - S. by E course in the case of the steering compass.

CAMMELL LAIRD AND COMPANY LIMITED

Builder's Signature.

Date

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 under Special Survey and is in accordance with the Rule requirements. It has been examined under full working conditions and found satisfactory and the vessel is, in my opinion, eligible for record Electric Light in Register book.

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

J. R. M. 23.7.29

Total Capacity of Generators 418 Kilowatts.

The amount of Fee ... £41. 19. 0

Travelling Expenses (if any) £

When applied for,

28/6/29

When received,

11/7/29

Surveyor to Lloyd's Register of Shipping.

Committee's Minute

LIVERPOOL 16 JULY 1929

Assigned

Electric Light.



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