

# REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office - 6 AUG 1929

Date of writing Report July 31<sup>st</sup> 1929 When handed in at Local Office -1 AUG. 1929 Port of Liverpool.

No. in Survey held at Birkenhead Date, First Survey 26/4/29 Last Survey 23/7/1929  
Reg. Book. (Number of Visits.....21.....)

2197B. on the SS. GODFREY B. HOLT. Tons { Gross 3563  
Net 2180.

Built at BIRKENHEAD. By whom built MESSRS CANNELL LAIRD & CO LTD. Yard No. 954. When built 1929

Owners MESSRS JOHN HOLT & CO LTD. Port belonging to Liverpool

Electric Light Installation fitted by THE SUNDERLAND FORGE & ENG<sup>CO</sup> LTD. Contract No. When fitted 1929

System of Distribution DOUBLE WIRE.

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

Direct or Alternating Current, Lighting DIRECT. 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 JES.

Generators, do they comply with the requirements regarding rating JES., are they compound wound JES.

are they over compounded 5 per cent. JES., if not compound wound state distance between each generator —

Where more than one generator is fitted are they arranged to run in parallel —, is an adjustable regulating resistance fitted in series with each shunt field —

Are all terminals accessible, clearly marked, and furnished with sockets JES., are they so spaced or shielded that they cannot be accidentally earthed, short circuited, or touched JES. Are the lubricating arrangements of the generators as per Rule JES.

Position of Generators IN MAIN ENGINE ROOM. AFTER END. STARBOARD.

is the ventilation in way of the generators satisfactory JES., are they clear of all inflammable material JES.

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 JES.

are their axes of rotation fore and aft JES.

Earthing, are the bedplates and frames of the generating plant efficiently earthed JES. are the prime movers and their respective generators in metallic contact JES.

Main Switch Boards, where placed MAIN ENGINE ROOM. AFT BULKHEAD. 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 JES.

are they protected from mechanical injury and damage from water, steam or oil JES., 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 JES., is all insulation of high dielectric strength and of permanently high insulation resistance JES.

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 JES.

and is the frame effectively earthed JES. Are the fittings as per Rule regarding:— spacing or shielding of live parts JES., accessibility of all parts JES., absence of fuses on back of board JES., proportion of omnibus bars JES.

individual fuses to voltmeter, pilot or earth lamp JES., connections of switches —

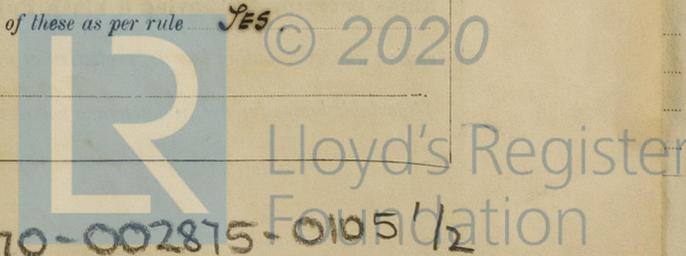
Main Switchgear, description of switchgear for each generator and each outgoing circuit, and arrangement of equalizer switches DOUBLE POLE SWITCH & FUSES FOR GENERATOR. SINGLE POLE SWITCH & DOUBLE POLE FUSES FOR EACH OUTGOING CIRCUIT.

Instruments on main switchboard 1 ammeters 1 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 LAMP, SWITCH AND FUSE ON EACH POLE.

Switches, Circuit Breakers and Fusible Cut-outs, do these comply with the requirements of the Rules JES.

Joint Boxes Section and Distribution Boards, is the construction, protection, insulation, material, and position of these as per rule JES.



**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 5/1

**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 ACCORDM<sup>Y</sup> & CABLES LEAD COVERED & BRAIDED SECURED WITH BERRS.

**CLIPS, BRACKETRY, SPACES & HOLDS:** LEAD COVERED ARMURED & BRAIDED SECURED WITH GAL IRON CLIPS.

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 YES.

**Joints in Cables,** state if any, and how made, insulated, and protected NONE MADE.

**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 \_\_\_\_\_

\_\_\_\_\_ 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 GUARDED, WATERTIGHT & GASTIGHT. DECK LIGHT FITTINGS.

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 \_\_\_\_\_, 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 \_\_\_\_\_

**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	1	10.5	110	95.5	320	SINGLE CYLINDER STEAM ENGINE.		
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. Ampères.	Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED.
				No.	Diameter.				
	MAIN GENERATOR	2	.11680	37	.064	95.5 ✓	37.	V.I.R.	BRIDED RAN IN GAL IRON PIPE.
	EQUALISER CONNECTIONS	—							
	AUXILIARY GENERATOR	—							
	EMERGENCY GENERATOR	—							
	ROTARY TRANSFORMER	—							
	AUXILIARY SWITCHBOARDS	—							
	ENGINE ROOM	2	.00299	3	.036	7.0 ✓	15.	V.I.R.	ARMURED LEAD COVERED & BRAIDED.
	BOILER ROOM	—							
	ACCOMMODATION - SALOON.	2	.00701	7	.036	19.6 ✓	390.	V.I.R.	LEAD COVERED & BRAIDED.
	NAVIGATION.	2	.00299	3	.036	6.2 ✓	456.	V.I.R.	LEAD COVERED & BRAIDED.
	ENGINEERS & CREW ACCOMM.	2	.00701	7	.036	11.5 ✓	150.	V.I.R.	LEAD COVERED & BRAIDED.
	WIRELESS	2	.00701	7	.036	12.5 ✓	435.	V.I.R.	LEAD COVERED & BRAIDED.
	SEARCHLIGHT	—							
	MASTHEAD LIGHT	2	.00194	3	.029	3.6 ✓	600.	V.I.R.	LEAD COVERED ARMURED & BRAIDED.
	SIDE LIGHTS	2	.00194	3	.029	3.6 ✓	90.	V.I.R.	LEAD COVERED & BRAIDED.
	COMPASS LIGHTS	2	.00194	3	.029	1.8 ✓	32.	V.I.R.	LEAD COVERED & BRAIDED.
	POOP LIGHTS	2	.00194	3	.029	2.9 ✓	300.	V.I.R.	LEAD COVERED & BRAIDED.
	CARGO LIGHTS - FORWARD	2	.00701	7	.036	13.6 ✓	390.	V.I.R.	LEAD COVERED & BRAIDED.
	CARGO LIGHTS - AFT	2	.00701	7	.036	11.5 ✓	135.	V.I.R.	LEAD COVERED & BRAIDED.
	ARC LAMPS	—							
	HEATERS (SMOKE PIPE)	2	.00701	7	.036	18.1 ✓	425.	V.I.R.	LEAD COVERED & BRAIDED.

**MOTOR CONDUCTORS.**

Ref. No.	DESCRIPTION.	No. of Motors.	Effective Area of each Conductor. Sq. Ins.	COMPOSITION OF STRAND.		Total Maximum Current. Ampères.	Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED.
				No.	Diameter.				
	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								

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.

p. pro. THE SUNDERLAND FORGE & ENG CO. LTD.

Electrical Engineers.

Date 19.7.29.

COMPASSES.

Distance between electric generators or motors and standard compass 138 FEET

Distance between electric generators or motors and steering compass 128 FEET

The nearest cables to the compasses are as follows:—

A cable carrying 6.2 Amperes 26 feet from standard compass 16 feet from steering compass.

A cable carrying .18 Amperes 10 feet from standard compass LED INTO feet from steering compass.

A cable carrying .18 Amperes LED INTO feet from standard compass 10 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 10° W degrees on all courses E.S.E - W.N.W course in the case of the standard

compass, and 2° W degrees on N.W. course in the case of the steering compass.

GAMMELL LAIRD AND COMPANY LIMITED.

J. W. Laird SECRETARY.

Builder's Signature.

Date 30 JUL 1929

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 in accordance with the Rules & under special survey. It has been examined under full working conditions & found satisfactory, & is eligible in my opinion for record of Elec light in Register book.

It is submitted that this vessel is eligible for THE RECORD. Elec light BR 8/8/29

Total Capacity of Generators 10.5 Kilowatts.

The amount of Fee ... £ 10.10.0

When applied for, -2 AUG. 1929

Travelling Expenses (if any) £

When received, 6.9.29

J. J. Milton

Surveyor to Lloyd's Register of Shipping.

Committee's Minute LIVERPOOL -2 AUG. 1929

Assigned

Electric Light

Im. 228.—Trans. (The Surveyors are requested not to write on or below the space for Committee's Minute.)



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