

REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL) 11 FEB 1928

Date of writing Report 19... When handed in at Local Office -9 FEB. 1928 Port of LIVERPOOL

No. in Survey held at Northwich Date, First Survey Nov 24/27 Last Survey Jan 16th 1928
Reg. Book. (Number of Visits... 4)

on the motor barge 'Castlegate' Tons { Gross 51 Net

Built at Northwich By whom built W. J. Garwood & Sons, Ltd. Yard No. 372 When built 1927

Owners Anglo-American Oil Co. Ltd. Port belonging to Liverpool

Electric Light Installation fitted by W. J. Garwood & Sons, Ltd. Contract No. ✓ When fitted 1927

System of Distribution Two wire D.C. ✓

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 ✓

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

are they over compounded 5 per cent. ✓, 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 ✓, are they so spaced or shielded that they cannot be accidentally earthed, short circuited, or touched ✓ Are the lubricating arrangements of the generators as per Rule ✓

Position of Generators engine room

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

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 ✓

are their axes of rotation fore and aft no, this ship.

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

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 ✓

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

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 ✓

and is the frame effectively earthed ✓ Are the fittings as per Rule regarding: - spacing or shielding of live parts ✓

accessibility of all parts ✓, absence of fuses on back of board ✓, proportion of omnibus bars ✓

individual fuses to voltmeter, pilot or earth lamp ✓, connections of switches ✓

Main Switchgear, description of switchgear for each generator and each outgoing circuit, and arrangement of equalizer switches.

Main D.P. Switch & fuses for generator, & D.P. switches & fuses for each outgoing circuit.

Instruments on main switchboard 2 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 2, earth lamps

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

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



Cables: Single, twin, concentric, or multicore Single 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

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 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 Subrip clipped to plating

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 OK

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 Yes

Earthing Connections, state what earthing connections are fitted and their respective sectional areas generator bolted to vessel frames

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 Yes

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 where 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 no, are any fittings placed in spaces where inflammable or explosive dust or gases are liable to be present, if so, how are they protected no, how are the cables led Yes, where are the controlling switches situated Yes

Searchlight Lamps, No. of none, whether fixed or portable, are they fitted as per Rule

Arc Lamps, other than searchlight lamps, No. of none, 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, located 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

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.	Ampères.	Revs. per Min.		Fuel Used.	Flash Point of Fuel.
MAIN	1	4	110	40	1000	Gardner Oil Engine	paraffin	
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. Amperes.	Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED.
				No.	Diameter.				
	MAIN GENERATOR	2	.06	19	.064	40	40		
	EQUALISER CONNECTIONS								
	AUXILIARY GENERATOR								
	EMERGENCY GENERATOR								
	ROTARY TRANSFORMER								
	AUXILIARY SWITCHBOARDS								
	ENGINE ROOM								
	BOILER ROOM								
	ACCOMMODATION								
	WIRELESS								
	SEARCHLIGHT								
	MASTHEAD LIGHT	2	.0029	3	.036	1	100		
	SIDE LIGHTS	2	.0029	3	.036	1	80		
	COMPASS LIGHTS								
	POOP LIGHTS								
	CARGO LIGHTS								
	ARC LAMPS								
	HEATERS	2	.022	7	.064	30	120		

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.
				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								
	STEELING 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.

For W. J. YARWOOD & SONS, LTD.,

W. J. Yarwood DIRECTOR

Electrical Engineers.

Date *3/2/28*

COMPASSES.

Distance between electric generators or motors and standard compass *no compasses fitted*
 Distance between electric generators or motors and steering compass
 The nearest cables to the compasses are as follows:—
 A cable carrying Amperes feet from standard compass 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
 Has the effect of switching on and off circuits, motors and other electro-magnetic apparatus within the vicinity of the compasses been noted
 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 W. J. YARWOOD & SONS, LTD.,

A. Darlington SECRETARY.

Builder's Signature.

Date *3/2/28*

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 electric light installation of this vessel has been constructed & fitted in accordance with the Rule Requirements, & the workmanship is good. On completion it has been examined under working conditions & found satisfactory, & is now eligible for record of 'Electric Light'.

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

J. W. D.
11/2/28

Total Capacity of Generators *4* Kilowatts.

The amount of Fee £ *5* .. : : *24/11/28*
 Travelling Expenses (if any) £ : : *28/11/28* *PAH.*

S. Lowndes
Surveyor to Lloyd's Register of Shipping.

Committee's Minute **LIVERPOOL 10 FEB. 1928**

Assigned *Electric Light*

Im. 1. 28.—Transfer. (The Surveyors are requested not to write on or below the space for Committee's Minute.)

