

# REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office

12 MAY 1934

Date of writing Report 19 When handed in at Local Office 10 MAY 1934 Port of LIVERPOOL.  
 No. in Survey held at Birkenhead Date, First Survey 25<sup>th</sup> Oct/33 Last Survey 9<sup>th</sup> May 1935  
 Reg. Book. on the TULIP (Number of Visits 31)  
 Built at Sudbrook (iron) By whom built Ears of J.A. Walker. Yard No. 60. When built 1897.  
 Owners Grayson, Rolfe & Co. Ltd. Port belonging to Liverpool.  
 Electric Light Installation fitted by Grayson, Rolfe & Co. Ltd. Contract No. — When fitted 1933.  
 Is the Vessel fitted for carrying Petroleum in bulk Yes.

System of Distribution Double wire  
 Pressure of supply for Lighting 110 volts, Heating — 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 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 —, is an adjustable regulating resistance fitted in series with each shunt field —  
 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 - Starboard side.  
 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 —  
 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 - Starboard side.  
 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 D.P. Switch and D.P. fuses for dynamo and 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 lamps connected to earth through switches and 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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**Cables:** Single, twin, concentric, or multicore *Single & Twin* 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 *1.8 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 *In hatch spaces: L.C.A. Braided clipped to trays. Along Deck: L.C.A. Braided in gal. iron pipe. In A/c: L.C.A. Braided clipped up.*

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 made except in Pump House. These encased in gas tight junction box.*

**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 *—* state the material of which the bushes are made *—*

**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,** *Not fitted* *and these separately wired*, controlled by separate switch and separate fuses *—*, are the fuses double pole *—*, are the switches and fuses grouped in a position accessible only to the officers on watch *—* has each navigation lamp an automatic indicator as per Rule *—*

**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 *Gas Proof fittings on deck and in Pump House* *Yes Proof* how are the cables led *main in pipe. Loop cables L.C.A. B & all fittings having glands making gas tight entry.*

where are the controlling switches situated *For Pump Room. in Forecastle. For Portable Combinations which are Gas Tight. In Engine Room and at socket.*

**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 *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	8	110	73	400	S.C. Steam Engine			
AUXILIARY									
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	10090	19	.083	73	118 ✓	12	V.I.R.	L.C.A. Braided
EQUALISER CONNECTIONS									
AUXILIARY GENERATOR									
EMERGENCY GENERATOR									
ROTARY TRANSFORMER	} MOTOR GENERATOR								
ENGINE ROOM	1	.00701	7	.036	8	24 ✓	16	V.I.R.	L.C.A. Braided
BOILER ROOM	}								
AUXILIARY SWITCHBOARDS									
Wheel House	1	.00701	7	.036	2	24 ✓	100	V.I.R.	L.C.A. Braided
Fore A/c	1	.00701	7	.036	4	24 ✓	350	V.I.R.	L.C.A. Braided
ACCOMMODATION									
WIRELESS									
SEARCHLIGHT									
MASTHEAD LIGHT	} Not Fitted								
SIDE LIGHTS									
COMPASS LIGHTS									
FOOT LIGHTS	1	.00194	3	.029	4	7.8 ✓	160	V.I.R.	L.C.A. Braided
CARGO LIGHTS	1	.00701	7	.036	20	24 ✓	12	V.I.R.	L.C.A. Braided
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.			
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.

GRANSON HULL & CLOVER DOCKS LTD.

J.A. Nottingham

Electrical Engineers.

Date 19<sup>th</sup> Jan/34

Secretary

#### COMPASSES.

Distance between electric generators or motors and standard compass 40 ft. approx.

Distance between electric generators or motors and steering compass —

The nearest cables to the compasses are as follows:—

A cable carrying 0.6 Ampères 4 feet from standard compass — feet from steering compass.

A cable carrying 2 Ampères 4 feet from standard compass — 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 — degrees on — course in the case of the steering compass.

GRANSON HULL & CLOVER DOCKS LTD.

J.A. Nottingham

Builder's Signature.

Date 19<sup>th</sup> Jan/34

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 on board under special survey and has been tried under working conditions and found in order. The materials and workmanship have been found to be good and sound.

Total Capacity of Generators 8 Kilowatts.

The amount of Fee —

£ Inclusive fee.

When applied for,

19

When received.

19

Travelling Expenses (if any) £

R.C. Clayton

Surveyor to Lloyd's Register of Shipping.

Committee's Minute

LIVERPOOL 11 MAY 1934

Assigned

Electric Light.

28

2m. 3.3L. — 1 runs gr.  
The Surveyors are requested not to write on or below the space for Committee's Minute.



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