

Rpt. 13.

No. 46091

# REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office... 1 DEC 1926

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No. in Survey held at PORT GLASGOW Date, First Survey 23rd July Last Survey 8th Sept 1926  
Reg. Book. (Number of Visits... 2)

65942 on the BUCKET HOPPER DREDGER "CARRONWATER" Tons { Gross 1232  
Net 566

Built at PORT GLASGOW By whom built MESSRS FERGUSON BROS. Yard No. 279 When built 1926.

Owners THE LONDON, MIDLAND & SCOTTISH RLY. Port belonging to

Electric Light Installation fitted by MESSRS J. CHARTERS. Contract No. 279 When fitted 1926.

System of Distribution Double wire looping - in System without jointing. ✓

Pressure of supply for Lighting 110 ✓ volts, Heating ✓ 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 overload Yes ✓, are they compound wound Yes ✓  
are they over compounded 5 per cent. Yes ✓, if not compounded wound state distance between each generator Yes ✓

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 Yes.

Are all terminals accessible and clearly marked Yes, are they so spaced or shielded that they cannot be accidentally earthed, or short circuited 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  
< 12" and < 48", are the generators protected from mechanical injury and damage from water, steam or oil Yes.  
are their axis 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 mounted on angle iron brackets secured to ship's side beside dynamo. ✓  
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 < 12" and < 48"

are they constructed wholly of durable, incombustible non-absorbent materials Enamelled slate panels, is all insulation of high dielectric strength and of permanently high insulation resistance Micanite, if semi-insulating material is used, are all conducting parts connected to one pole insulated from the slab with mica or micanite and the slab similarly insulated from its framework both poles insulated, and is the frame effectively earthed Yes.

Are the following fittings as per Rule, viz.:— 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.

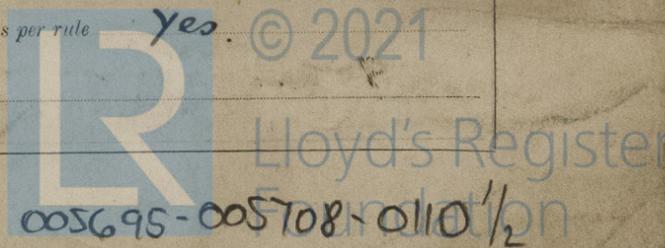
Main Switchgear, description of switchgear for each generator and each outgoing circuit, and arrangement of equalizer switches One D.P. Q.B. switch & 2 S.P. H.V. fuses for dynamo & 4-50% S.P. Q.B. switches and eight S.P. 50% H.V. fuses for circuits.

Instruments on main switchboard 1 ammeter, 1 voltmeter, ✓ 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 One set earth lamps with switches & fuses

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

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



**Insulation of Cables**, state type of cables, single or twin *Single* are the cables insulated and protected as per Tables III or IV of the Rules *Yes*

**Fall of Pressure**, state maximum between bus bars and any point of the installation under maximum load *< 4 volts*

**Cable Sockets and other connections**, are the ends of all cables having a sectional area of 0.007 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. *Carries on perforated steel cable trays and clipped direct to the steel work & wood work*

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 casings *✓*, are the casings and caps covered with lead *✓*, are the caps spaced as per Table VI *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 Positions**, 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 on deck, engine room, machinery spaces 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*, are separate screens provided for the use of oil and electric side lights *Yes*

are separate oil lanterns provided for the mast head lights and side lights *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 *Guarded 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 axis 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 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	4.6	110	44.6	600	Single Cyl. Incl. For. Hub Engine	✓	✓
AUXILIARY								
EMERGENCY								oil
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	1	.0461	19	.056	54.6	20	P.V. IR.	Lead covered.
	AUXILIARY GENERATOR								
	EMERGENCY GENERATOR								
	ROTARY TRANSFORMER								
	AUXILIARY SWITCHBOARDS								
	ENGINE ROOM								
	BOILER ROOM	1	.00532	3	.048	8.75	10	P.V. IR.	Lead covered.
	FORWARD	1	.00532	3	.048	5.2	300	P.V. IR.	Lead covered.
	DECK CLUSTERS	1	.0125	7	.048	18.2	10	P.V. IR.	Lead covered.
	NAVIGATION	1	.00532	3	.048	5.8	372	P.V. IR.	Lead covered.
	WIRELESS								
	SEARCHLIGHT								
	MASTHEAD LIGHT		.00246	1	.056	36.9	360	P.V. IR.	Lead covered.
	SIDE LIGHTS		.00246	1	.056	9	120	do.	do.
	COMPASS LIGHTS		.00246	1	.056	27	20	do.	do.
	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.
				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								
	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.

*J. Charters.*

Electrical Engineers.

Date *2nd Sept 1926.*

COMPASSES.

Distance between electric generators or motors and standard compass *57'*  
 Distance between electric generators or motors and steering compass *one compass fitted.*  
 The nearest cables to the compasses are as follows:—  
 A cable carrying *5.8* Ampères *8* feet from standard compass ✓ feet from steering compass.  
 A cable carrying *5.2* Ampères *40* feet from standard compass ✓ feet from steering compass.  
 A cable carrying *.27* Ampères *in* feet from standard compass ✓ feet from steering compass.  
 Has the compass 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.

FERGUSON BROTHERS (PORT GLASGOW) LTD.

*Robert Ferguson*

DIRECTOR. 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 on board under special survey. Tested under full working conditions and found satisfactory. The workmanship was found to be good and sound.*

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

*J. Rankin*  
3/10/26

Total Capacity of Generators *4.6.* Kilowatts

The amount of Fee ... £ *5.0.0* : *@ 4/6* When applied for.

Travelling Expenses (if any) £ *10/6* : *2/11/26 p.m.s.t.* When received.

*J. Rankin*  
Surveyor to Lloyd's Register of Shipping.

Committee's Minute **GLASGOW 30 NOV 1926**

Assigned *Elec. Light.*

*J. Rankin*

*29/11/26*

Im. 24.—Transfer. (The Surveyors are requested not to write on or below the space for Committee's Minute.)



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