

# REPORT ON ELECTRIC FITTINGS.

No. 8687.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Date of writing Report 3-4-1929 When handed in at Local Office

Received at London Office 10 APR 1929

No. in Survey held at 110

Date, First Survey 1-2-29 Last Survey 3-4-1929

on the TWIN SCREW FERRY "PERCH ROCK"

Built at 110

By whom built Caledon S.S. &amp; E. Co. Ltd. No. 328

Tons { Gross  
Net

When built 1929.

Owners The Mayor, Aldermen &amp; Burgesses of the Borough of Wallasey

Port belonging to Liverpool

Electric Light Installation fitted by Caledon S.S. &amp; E. Co. Ltd.

Contract No. 328. When fitted 1929.

## System of Distribution

Two wires

## Pressure of supply for Lighting

110

volts, Heating

volts, Power

110

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

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

Yes

Where more than one generator is fitted are they arranged to run in parallel

No

, 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 Starting platform

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

Yes

Yes

, are the generators protected from mechanical injury and damage from water, steam or oil

Yes

are their axes of rotation fore and aft

No

Earthing, are the bedplates and frames of the generating plant efficiently earthed

Yes

their respective generators in metallic contact

Yes

are the prime movers and

## Main Switch Boards, where placed

Engine Room Starting platform

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

Yes

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

woodwork or other combustible material, state distance of same horizontally from or vertically above the switchboards

Yes

, if situated near unprotected

Yes

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

Yes

with mica or micanite or other non-hygroscopic insulating material, and the slab similarly insulated from its framework

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 1- D. P. 200 amp

Switch, 2- 200 amp. fuses, 1 D. P. 100 amp. Switch, 2- 200 amp. fuses, 5- S. P.

60 amp. Switch, 10- 60 amp. fuses. 6- S. P. 30 amp. switches &amp; 12- 30 amp. fuses.

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- 30 watt

M. F. lamps in series, centre point earthed, controlled by 2- 5 amp. 2 way switches.

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* are the cables insulated and protected as per Tables IV or V of the Rules *for IV.*

**Fall of Pressure,** state maximum between bus bars and any point of the installation under maximum load *3 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 *for*

**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 *for*

**Support and Protection of Cables,** state how the cables are supported and protected *V.I.R. L.C. & L.C. Clipped in Bulkheads.*  
*L.C.A.B. in Engine Room, Special heat resisting cables in conduit in Boiler Room.*  
 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 *for*

**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 *for*

**Bushes in Beams and Non-watertight Partitions,** where unarmoured cables pass through beams and non-watertight partitions, are the holes efficiently bushed *for* 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 *for*

**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 *for*, controlled by separate switch and separate fuses *for*, are the fuses double pole *for*  
 are the switches and fuses grouped in a position accessible only to the officers on watch *for*  
 has each navigation lamp an automatic indicator as per Rule *Tell tale lamp.*

**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 *for*  
 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 *✓*  
*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 *✓*

**Are 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 *for*, are the coils self-contained and readily removable for replacement *for*  
 are the brushes, brush holders, terminals and lubricating arrangements as per Rule *for*, are the motors placed in well-ventilated compartments in which inflammable gases cannot accumulate and clear of all inflammable material *for*  
 are they protected from mechanical injury and damage from water, steam or oil *for* are their axes of rotation fore and aft *No.*  
 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 *Totally enclosed.* 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.	Amperes.		Fuel Used.	Flash Point of Fuel.		
MAIN	1	20	110	182	300	10 x 8" Natural Gas Engine			
AUXILIARY	1	10	110	91	300	8 x 6" do			
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	.2	37	.085"	182	✓ 40	Rubber	V.I.R.
	EQUALISER CONNECTIONS								
	AUXILIARY GENERATOR	2	.075	19	.072"	91	✓ 40	Rubber	V.I.R.
	EMERGENCY GENERATOR								
	ROTARY TRANSFORMER...								
	AUXILIARY SWITCHBOARDS								
	ENGINE ROOM	2	.097	7	.036"	16	✓ 10	Rubber	L.C.A. & Braided
	BOILER ROOM	2	.007	7	.036"	8	✓ 30	Compound	Braided
	ACCOMMODATION	2	.007	7	.036"	10.5	✓ 40	Rubber	L.C.A. & Braided
	Deck Lights	2	.010	7	.044"	21.8	✓ 100	"	"
	Navigation	2	.007	7	.036"	4	✓ 100	"	"
	WIRELESS								
	SEARCHLIGHT								
	MASTHEAD LIGHT...	2	.002	3	.029	.36	✓ 150	Rubber	Lead Linn.
	SIDE LIGHTS	2	.002	3	.029	.36	✓ 30	"	"
	COMPASS LIGHTS	2	.002	3	.029	.36	✓ 15	"	"
	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								
	(a) MOTOR GENERATOR								
	(b) MAIN MOTOR								
	WORKSHOP MOTOR								
	VENTILATING FANS								
	Boiler Room	3	.007	7	.036"	1.5	✓ 15	Rubber	L.C.A. & B.
	Engine Room	2	.007	7	.036"	1.0	✓ 30	"	"
	Sanitary	4	.06	19	.064"	64	✓ 100	"	"



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.

*W. M. Gillanders*

Electrical Engineers.

Date

*4/April/29*

#### COMPASSES.

Distance between electric generators or motors and standard compass

*50 feet.*

Distance between electric generators or motors and steering compass

*40 feet.*

The nearest cables to the compasses are as follows:—

A cable carrying *4* Ampères *✓* feet from standard compass *6* feet from steering compass.

A cable carrying *36* Ampères *✓* feet from standard compass *1* 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. *✓*

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 *no* degrees on *all* courses in the case of the standard

compass, and *no* degrees on *all* courses in the case of the steering compass.

THE CALEDON SHIPBUILDING & ENGINEERING CO. LTD.

*John H. Tinter*

Builder's Signature.

Date

*4/April/29*

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 efficiently fitted on board in accordance with the Rules.*

*The materials & workmanship are good.*

*The installation has been examined under full working condition and found satisfactory.*

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

ELEC. LIGHT.

*LR*

*12.4.29*

Total Capacity of Generators *30* Kilowatts.

The amount of Fee ...

£ *22 : 10* :

When applied for,

*9-4-1929.*

Travelling Expenses (if any) £ *✓* :

When received,

*16.4.1929.*

*Myrell*  
Surveyor to Lloyd's Register of Shipping.

Committee's Minute

TUE. 16 APR 1929

Assigned

*Elec Light*