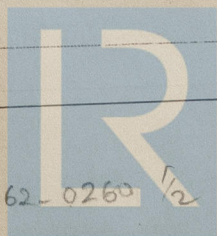


# REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

-4 DEC 1929

Date of writing Report 30<sup>th</sup> Nov 1929 When handed in at Local Office 4<sup>th</sup> Dec 1929 Port of LeithNo. in Survey held at Leith Date, First Survey 28<sup>th</sup> Oct. Last Survey 22<sup>nd</sup> Nov 1929  
(Number of Visits 8)Reg. Book. 41785 on the M.V. "PORT WAIKATO" Tons Gross 668  
Net 342Built at Leith By whom built H. Robb Ltd Yard No. 113 When built 1929Owners A. J. Watchlin Esq Port belonging to LeithElectric Light Installation fitted by Messrs W. M. Goodfellow Ltd Contract No. ✓ When fitted 1929System of Distribution DOUBLE WIREPressure of supply for Lighting 125 volts, Heating - volts, Power 125 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 YESGenerators, 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 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 YESPosition of Generators STARBOARD SIDE OF ENGINE ROOM.is the ventilation in way of the generators satisfactory YES, are they clear of all inflammable material YESif situated near unprotected woodwork or other combustible material, state distance of same horizontally from or vertically above the generators YESand -, are the generators protected from mechanical injury and damage from water, steam or oil YESare 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 STARBOARD SIDE OF 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 YESare 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 YESif 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 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 YESindividual 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 DOUBLE POLE SWITCHES & FUSES CONTROLLING EACH GENERATOR, S.P. SWITCHES & FUSES CONTROLLING EACH OUTGOING CIRCUIT.Instruments on main switchboard ONE ammeters ONE 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 BETWEEN POSITIVE & NEGATIVE POLES, WITH 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 & TWINS 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 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

**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 NONE USED.

**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* LEAD COVERED CABLES IN HEAVY. WI.

CONDUIT TWO' 40LOS.- ARMoured CABLES WITH GI. SADDLES. LEAD CABLES WITH BRASS SADDLES.

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.

**Watertight Glands and Deck Tubes,** are all cables passing through decks and watertight bulkheads provided with deck tubes or watertight glands.

**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.

**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 sejarate 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.

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 where exposed to drip or condensed moisture, watertight

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.

NONE SO PLACED.

are any fittings placed in spaces where inflammable or explosive dust or gases are liable to be present, if so, how are they protected NONE SO PLACED.

... how are the cables led

where  $a_i$  are the controlling switches situated

Searchlight Lamps, No. of \_\_\_\_\_, whether fired 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.....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, 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 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*

if not of this type, state distance of the combustible material horizontally or vertically above the motor

**Control Gear and Resistances,** are the generator field and motor speed regulators, starters and controllers constructed and fitted as per Rule 465.

**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			R.P.M. per Min.	DRIVEN BY	WHERE DRIVEN BY AN INTERNAL COMBUSTION ENGINE.	
		Kilowatts.	Volts.	Ampères.			Fuel Used.	Flash Point of Fuel.
MAIN ... ..	1	20	125	160		DIESEL ENGINE	Diesel Oil.	
AUXILIARY ...	1	75	125	6		PETROL ENGINE		
EMERGENCY								
AUXILIARY	1	2	125	16		DRIVEN FROM ENGINE SHAFT.		—
ROTARY								
TRANSFORMER								

## LIGHTING AND HEATING CONDUCTORS.

[illegible]

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MOTOR CONDUCTORS.

Ref. No.	DESCRIPTION.	No. of Motors.	Effective Area of each Conductor Sq. Ins.	COMPOSITION OF STRAND.		Total Maximum Current. "m. circs."	Approxim to Load (Load and Return) Feet.	Insulated with	HOW PROTECTED.
				No.	Diameter.				
CEM <sup>REL</sup>	BALLAST PUMP ... ..	1	0.40	19	0.052	62	124	RUBBER	LEAD & ARMOUR
	MAIN BILGE LINE PUMPS ...								
	GENERAL SERVICE PUMP ...	1	0.40	19	0.052	62	205	"	" " "
	EMERGENCY BILGE PUMP ...								
	SANITARY PUMP ... ..								
	CIRC. SEA WATER PUMPS ...								
	CIRC. FRESH WATER PUMPS								
	AIR COMPRESSOR ... ..	1	0.1	7	0.054	27	124	"	" " "
	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 ... ..								
	LUB OIL HEATER	1	0.3	19	0.044	45	250	RUBBER	LEAD & ARMOUR
	PUR. LUB OIL TRANSFER PMP	1	0.4	19	0.052	62	225	"	" " "
	" " " " "	1	0.002	3	0.029	3	95	"	" " "
CEM <sup>REL</sup>	OIL PURIFIER	1	0.002	3	0.029	3	105	"	" " "



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. Mun Goodfellow & Co Ltd  
W. M. Goodfellow  
Director

Electrical Engineers.

Date 30/11/29

#### COMPASSES.

Distance between electric generators or motors and standard compass 50 FEET.

Distance between electric generators or motors and steering compass 45 "

The nearest cables to the compasses are as follows:—

A cable carrying 15 Amperes 6 feet from standard compass LEAD 1/4 TO feet from steering compass.

A cable carrying 15 Amperes LEAD 1/4 TO feet from standard compass 6 feet from steering compass.

A cable carrying 16 Amperes 8 feet from standard compass 6 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 all course in the case of the standard compass, and nil degrees on all course in the case of the steering compass.

HENRY ROBB, LIMITED

Robert Crawford

Builder's Signature.

Date 3/12/29

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 sound & good, & the installation was found satisfactory under full load & working conditions.

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

Free Light

20/12/29

Total Capacity of Generators 20 Kilowatts.

The amount of Fee ... £ 17 : 10 : 0

When applied for,

19.

Travelling Expenses (if any) £ :

When received,

19.12.29

John Houston  
Surveyor to Lloyd's Register of Shipping.

Committee's Minute TUE. 10 DEC 1929

Assigned

Free Light



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