

18 AUG 1925

Rpt. 13.

No. 16373

# REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

18 AUG 1925

Received at London Office

Date of writing Report 15 Aug 1925 When handed in at Local Office 17 Aug 1925 Port of WEST HARTLEPOOL

No. in Survey held at West Hartlepool Date, First Survey 9 June Last Survey 29 July 1925  
Reg. Book. (Number of Visits.....)

39652 on the SS. "KARTIGI"

Tons { Gross 2346.59  
Net 1166.62

Built at Hartlepool By whom built *W. H. & G. ...* Yard No. 974 When built 1925

Owners Union S. S. Co. of New Zealand Port belonging to *Hellington ...*

Electric Light Installation fitted by *W. H. & G. ...* Contract No. 974 When fitted 1925

System of Distribution *Double wire system*

Pressure of supply for Lighting 110 volts, Heating 110 volts, Power - volts.

Direct or Alternating Current, Lighting *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 *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 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 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 Port 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 *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 *Engine room Port 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 *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*, 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, incombustible 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 connected to one pole insulated from the slab with mica or micanite and the slab similarly insulated from its framework *Yes*, 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 *Double pole*

*switched fuses in dynamo mains, Double pole switches & fuses in each outgoing circuit*

Instruments on main switchboard *One* ammeters *One* voltmeters - synchronising device for paralleling purposes.

Earthing 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 & 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 ~~IV~~ of the Rules yes

**Fall of Pressure**, state maximum between-bus bars and any point of the installation under maximum load 3.5

**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 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 lead covered cables in galvanized iron pipes along deck, lead covered cables in accommodation

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 VI yes

**Refrigerated Chambers**, if lights are fitted, are the cables and fittings in accordance with the special requirements yes

**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 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 yes, 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 none fitted

**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 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 no, where are the controlling switches situated no

**Searchlight Lamps**, No. of no, whether fixed or portable no, are their fittings as per Rule no

**Arc Lamps**, other than searchlight lamps, No. of no, are their live parts insulated from the frame or case no, are their fittings as per Rule no

**Motors**, are their working parts readily accessible no, are the coils self-contained and readily removable for replacement no, are the brushes, brush holders, terminals and lubricating arrangements as per Rule no, are the motors placed in well-ventilated compartments in which inflammable gases cannot accumulate and clear of all inflammable material no, are they protected from mechanical injury and damage from water, steam or oil no are their axis 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 no, if not of this type, state distance of the combustible material horizontally or vertically above the motors no and no

**Control Gear and Resistances**, are the generator field and motor speed regulators, starters and controllers constructed as per Rule no

**Lightning Conductors**, where lightning conductors are required, are these fitted as per Rule no

**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 no

If portable lamps for use in dangerous spaces are supplied, are they of a type approved by the Home Office no

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	10	110	90	300	Single cylinder steam engine		
AUXILIARY								
EMERGENCY								
ROTARY TRANSFORMER								

Ref. No.	DESCRIPTION.	No. of Conductors.	Effective Area of each Conductor. Sq. Ins.	COMPOSITION OF STRAND.		Total Maximum Current. Ampères.	Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED.
				No.	Diameter.				
1.	MAIN GENERATOR	2	.10090	19	.083	90	40	Pure rubber	Lead covered
	AUXILIARY GENERATOR								
	EMERGENCY GENERATOR								
	ROTARY TRANSFORMER								
	AUXILIARY SWITCHBOARDS								
2.	ENGINE ROOM	2	.01046	7	.044	13.2	46	" "	Lead covered
	BOILER ROOM								
3.	Salon & Toward	2	.02214	7	.064	20.5	240	" "	Lead covered
4.	etc	2	.00701	7	.036	9.6	80	" "	Lead covered
5.	WIRELESS	2	.01046	7	.044	25	280	Pure rubber	Lead covered
6.	SEARCHLIGHT	2	.00152	1	.044	1.02	120	" "	Insine hoses
7.	MASTHEAD LIGHT	2	.00152	1	.044	1.02	20	" "	Lead covered
8.	SIDE LIGHTS	2	.00152	1	.044	.5	12	" "	" "
9.	COMPASS LIGHTS	2	.00152	1	.044	1.02	290	" "	" "
10.	ARC LAMPS	2	.02214	7	.064	32	40	" "	" "
	HEATERS								

Ref. No.	DESCRIPTION.	No. of Motors.	Effective Area of each Conductor. Sq. Ins.	COMPOSITION OF STRAND.		Total Maximum Current. Ampères.	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.

For Clarke, Chapman & Co., Ltd.  
*W. Woodson* Electrical Engineers. Date *Aug 14<sup>th</sup> 1925*  
 Director.

COMPASSES.

Distance between electric generators or motors and standard compass *146 ft*

Distance between electric generators or motors and steering compass *140 "*

The nearest cables to the compasses are as follows:—

A cable carrying *.5* Amperes *12* feet from standard compass *6* feet from steering compass.

A cable carrying *.5* Amperes *6* feet from standard compass *12* feet from steering compass. *lead covered*

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 *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.

FOR WILLIAM GRAY & Co., LIMITED

*A.W. Glashan* Director Builder's Signature. Date

Is this installation a duplicate of a previous case *no* If so, state name of vessel *lead covered*

General Remarks (State quality of workmanship, opinions as to class, etc.)  
*2 .0052 1 .044 20 " " main cables*  
*2 .0052 1 .044 20 " " lead covered*  
*2 .0052 1 .044 20 " " "*  
*2 .0221+ 7 .004 20 " " "*

*This installation has been fitted under survey. The materials and workmanship are good and efficient. On completion it was tried under full working conditions with satisfactory results.*

It is submitted that this record should be entered in THE RECORD. *Elec. Dept*  
*R.D.*  
*19/8/25*

Total Capacity of Generators *10.* Kilowatts

The amount of Fee ... £ *10 : 0* : *31 July 1925* When applied for,  
 Travelling Expenses (if any) £ : : *7 Aug 1925* When received,  
*E.H.B.*

*R.D. Shilston*  
 Surveyor to Lloyd's Register of Shipping.

Committee's Minute

Assigned

Im. 322.—Transfer. (The Surveyors are requested not to write on or below the space for Committee's Minute.)



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