

# REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office

JUL 31 1923

Date of writing Report

19

When handed in at Local Office

30 JUL 1923

Port of

Sunderland

No. in Survey held at

Sunderland

Date, First Survey

June 29

Last Survey

17 July 1923

Reg. Book.

on the

S/S "ERRINGTON DUNFORD"

(Number of Visits.....)

Built at

Sunderland

By whom built

Swan, Hunter &amp; Higham Richardson &amp; Co.

Yard No.

1213

When built

1923

Owners

Dunford Steamship Co.

Port belonging to

Newcastle

Electric Light Installation fitted by

The Sunderland Forge &amp; Eng Co.

Contract No.

When fitted 1923

System of Distribution Two 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 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

is an adjustable regulating resistance fitted in series with each shunt field

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

In Engine Room

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

Near to Generator in 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

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

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 Main Switch &amp; Fuses for Generator. Single Pole Switches &amp; Double Pole Fuses for Outgoing 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

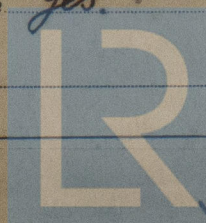
Earth Lamps

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



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Lloyd's Register

W526-0279 1/2



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

Fall of Pressure, state maximum between bus bars and any point of the installation under maximum load 31066

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

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 Lead Covered & Braided in Pipe

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

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 Fibre

Earthing Connections, state what earthing connections are fitted and their respective sectional areas

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

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

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 1, whether fixed or portable 1, are their fittings as per Rule 1

Arc Lamps, other than searchlight lamps, No. of 1, are their live parts insulated from the frame or case 1, are their fittings as per Rule 1

Motors, are their working parts readily accessible 1, are the coils self-contained and readily removable for replacement 1

are the brushes, brush holders, terminals and lubricating arrangements as per Rule 1, are the motors placed in well-ventilated compartments in which inflammable gases cannot accumulate and clear of all inflammable material 1

are they protected from mechanical injury and damage from water, steam or oil 1 are their axis of rotation fore and aft 1

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 1, if not of this type, state distance of the combustible material horizontally or vertically above the motors 1 and 1

Control Gear and Resistances, are the generator field and motor speed regulators, starters and controllers constructed as per Rule 1

Lightning Conductors, where lightning conductors are required, are these fitted as per Rule 1

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 1

If portable lamps for use in dangerous spaces are supplied, are they of a type approved by the Home Office 1

## 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	5	110	46	430	Open Type Inverted Steam Engine		
AUXILIARY								
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	.0221	7	.064	46	40	Rubber.	Run in Pipe
	AUXILIARY GENERATOR								
	EMERGENCY GENERATOR								
	ROTARY TRANSFORMER								
	AUXILIARY SWITCHBOARDS								
	ENGINE ROOM	2	.0090	7	.036	5.6	40	Rubber	Lead Covered, Armoured & Braided
	BOILER ROOM	2	.0090	7	.036	18.0	180	Rubber.	Lead Covered & Braided in Pipe
	WIRELESS								
	SEARCHLIGHT	2	.0019	3	.029	1.12	240	Rubber	Lead Covered & Braided in Pipe
	MASTHEAD LIGHTS	2	.0019	3	.029	1.12	410	"	Braided in Pipe
	SIDE LIGHTS	2	.0019	3	.029	1.12	90	"	Lead Covered.
	COMPASS LIGHT	2	.0019	3	.029	0.6	50	"	Lead Covered & Braided in Pipe
	PORT LIGHT	2	.0019	3	.029	1.12	240	"	Lead Covered & Braided in Pipe
	CARGO LIGHTS	2	.0090	7	.036	11.3	180	"	Lead Covered & Braided in Pipe
	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.

p.pro. THE SUNDERLAND FORGE & ENGINEERING CO. LTD.

Electrical Engineers.

Date 19th July 1923.

Director.

#### COMPASSES.

Distance between electric generators or motors and standard compass

Distance between electric generators or motors and steering compass

230 feet

The nearest cables to the compasses are as follows:—

A cable carrying 18 Amperes — feet from standard compass 50 feet from steering compass.

A cable carrying 1/2 Amperes — feet from standard compass 6 feet from steering compass.

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

no difference

The maximum deviation due to electric currents was found to be none degrees on all courses course in the case of the standard

compass, and — degrees on — course in the case of the steering compass.

Sir Wm Thompson

Standard & Steering Compass Combined

For SWAN, HONTER & WIGHAM RICHARDSON, LTD.

Builder's Signature.

Date 23rd July 1923.

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.)

The electric light installation in this vessel has been fitted in a satisfactory manner and in accordance with the rules

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

See Light.

18/7/23.

Total Capacity of Generators 5 Kilowatts

The amount of Fee ...

£

5

:

—

:

18

:

19

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23

Travelling Expenses (if any) £

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When received,

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Committee's Minute

Assigned

Surveyor to Lloyd's Register of Shipping.



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