

REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office

11 AUG 1926

Date of writing Report 17.12.26 When handed in at Local Office 17.12.26 Port of Beefort

No. in Survey held at Beefort Date, First Survey 2nd Oct Last Survey 14th Dec 1926
 Reg. Book. 75761 on the STEEL TWIN SC. LLANDAFF CASTLE (Number of Visits 6)

Built at Beefort By whom built Wakman Clark & Co. Ltd. Yard No. 488 Tons Gross 10900
Net 6700 When built 1926

Owners Union Castle Mail S.S. Co. Ltd. Port belonging to London

Electric Light Installation fitted by The Sunderland Forge & Engineering Co. Ltd. Contract No. _____ When fitted 1926

System of Distribution Double Wire ✓

Pressure of supply for Lighting 220 ✓ volts, Heating 220 ✓ volts, Power 220 ✓ 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 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 Yes ✓, 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 Main Engine Room Starbd

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 Main Engine Room beside Generators

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 In some Comp.

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 Triple Pole Overload & Reverse Current Circuit Breakers, 3rd Pole acts as Equaliser switch. Double Pole Switches

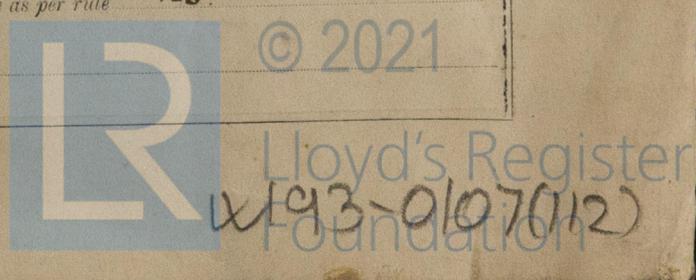
& Fuses on each outgoing circuit.

Instruments on main switchboard 4 ammeters 3 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 E.L. Circuits Single Wire

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 *9 4-5*

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 *—*

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 *Metal Clips Lead Covered Armoured & Braided in Machinery Spaces Lead Covered & Braided in Accommodation*

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 *Yes*

Joints in Cables, state if any, and how made, insulated, and protected *—*

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 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 *Emergency Generator on Boat Deck, Top of Engine Casing. Double-pole Circuit Breaker. Generator driven by Diesel Engine.*

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 *—*, 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 *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* *Yes*

are they protected from mechanical injury and damage from water, steam or oil *Yes*, *are their axis 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 motors *—* and *—*

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

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

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 ...	3	60 ✓	220	273	450	Steam Engine		
AUXILIARY ...								
EMERGENCY ...	1	36 ✓	220	163.5	325	Diesel Engine		
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. Ampères.	Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED.
				No.	Diameter.				
	MAIN GENERATOR...	2	.400 ✓	61	.093	273	100	V.I.R.	Lead Covered
	AUXILIARY GENERATOR								
	EMERGENCY GENERATOR ...	2	.200 ✓	37	.083	163.5	30	do	Lead Covered Arms Braided
	ROTARY TRANSFORMER...								
	AUXILIARY SWITCHBOARDS ...								
	ENGINE ROOM ...	2	.0225 ✓	7	.064	28	50	do	do
	BOILER ROOM ...								
	Galley	2	.100 ✓	19	.083	108	170	do	do
	Cabin Fans	2	.075 ✓	19	.072	90	110	do	do
	Cargo	2	.030 ✓	19	.044	33.4	50	do	do
	1st d. Accom.	2	.075 ✓	19	.072	75	110	do	do
	do do	2	.0225 ✓	7	.064	32	80	do	do
	3rd d. Accom	2	.0225 ✓	7	.064	29	255	do	do
	Crew Accom	2	.045 ✓	7	.052	17.5	400	do	do
	Boiler Stores	2	.090 ✓	7	.044	16	80	do	do
	WIRELESS ...	2	.0225 ✓	7	.067	14	285	do	Lead Covered & Braided
	SEARCHLIGHT ...								
	MASTHEAD LIGHT...	2	.003 ✓	3	.036	.5	780	do	do
	SIDE LIGHTS...	2	.003 ✓	3	.036	.5	180	do	do
	COMPASS LIGHTS ...	2	.002 ✓	3	.029	.14	40	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. 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 ...	1	.100 ✓	19	.083	70	225	V.I.R.	Lead Covered Arm & Braided
	SANITARY PUMP ...								
	CIRC. SEA WATER PUMPS ...								
	CIRC. FRESH WATER PUMPS ...								
	AIR COMPRESSOR ...								
	FRESH WATER PUMP ...								
	ENGINE TURNING GEAR ...	2	.0225 ✓	7	.064	43	140	do	do
	ENGINE REVERSING GEAR ...								
	LUBRICATING OIL PUMPS ...								
	OIL FUEL TRANSFER PUMP								
	WINDLASS ...								
	WINCHES, FORWARD ...								
	WINCHES, AFT ...								
	STEERING GEAR ...								
	WORKSHOP MOTOR ...	1	.0075 ✓	7	.029	16	180	do	do
	VENTILATING FANS ...	6	.060 ✓	19	.064	77.6	80	do	do
	do. do.	7	.075 ✓	19	.072	87.8	80	do	do
	COOLER FANS	4	.0225 ✓	7	.064	26.0	240	do	do
	ASH HOISTS	2	.0100 ✓	7	.044	18.0	250	do	do
	ENG. ROOM VENT FAN	1	.0100 ✓	7	.044	21	160	do	do
	WANGUNGO BOAT GEAR	12	.060 ✓	19	.064	161	210	do	do



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.

F. PRO THE SUNDERLAND FORGE & ENGINEERING CO., LTD.

J. Thompson

Electrical Engineers.

Date 10 DEC 26

COMPASSES.

Distance between electric generators or motors and standard compass	Generators	136 feet	Motors	33 feet
Distance between electric generators or motors and steering compass	Generator	140 feet	Motor	30 feet

The nearest cables to the compasses are as follows:—

A cable carrying	5.7	Ampères	12	feet from standard compass	10	feet from steering compass.
A cable carrying	1.4	Ampères	2	feet from standard compass	2	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 *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 *nil* degrees on *Any* course in the case of the steering compass.

PRO WORKMAN, CLARK & CO., LIMITED
W. St. ...
 ASSISTANT SECRETARY.

Builder's Signature. Date 17.12.26.

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 made under special survey. The material and workmanship is good. It has been examined under working conditions on board the vessel with satisfactory results. In my opinion the vessel is eligible for notation "fitted for electric light."*)

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

J.W.D.
 22/12/26

Total Capacity of Generators *96* Kilowatts

The amount of Fee ... £ *31 : 6* : *17-12-26*

Travelling Expenses (if any) ... : *22-12-26*

R. Lee Anneson

Surveyor to Lloyd's Register of Shipping.

Committee's Minute

Assigned *Elec. Light*

Im. 924.—11 transfer. (The Surveyors are requested not to write on or below the space for Committee's Minutes.)



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