

# REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Date of writing Report 29th MAY 1930 When handed in at Local Office 4th June 1930 Port of Belfast

No. in Survey held at BELFAST. Date, First Survey 5th March Last Survey 15th May 1930  
Reg. Book. on the Steel Ss "CITY OF SYDNEY" (Number of Visits 4)

Built at BELFAST. By whom built NORMAN CLARK (1928) LTD. Yard No. 504. When built 1930.  
Owners ELLERMAN CITY LINES. Ltd. Port belonging to

Electric Light Installation fitted by SUNDERLAND FORGE & ENGRS CO LTD. Contract No. 504 When fitted 1930.

System of Distribution DOUBLE WIRE DISTRIBUTION BOX.

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 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 - , 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.

Position of Generators ENGINE ROOM STARBOARD 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 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 ENGINE ROOM STARBOARD.

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, 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 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 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

D.P. SWITCH & FUSES FOR GENERATOR. D.P. SWITCHES & FUSES FOR EACH OUTGOING CIRCUIT.

Instruments on main switchboard 1 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

LAMPS CONNECTED TO EARTH THRO SWITCH & FUSE ON EACH POLE.

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.



Cables: Single, twin, concentric, or multicore. SINGLE 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. 5.0 lb.

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. 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. LEAKS CABLES RUN ALONG DECK IN HEAVY GALVANISED IRON PIPE.

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

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 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. FIBRE X 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. NONE

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

Secondary Batteries, are they constructed and fitted as per Rule. -

Fittings, are all fittings on weather decks, in storerooms 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. CAST IRON TYPE 'WIGAN' FITTINGS. 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. 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 inflammable material. YES. 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. T.E., 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. 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	1	15	110	136	500	5. P.K.E. 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. Ampères.	Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED.
				No.	Diameter.				
	MAIN GENERATOR	2	.15	37	.072	136	20	RUBBER	L.C.A.K.B.
	EQUALISER CONNECTIONS								
	AUXILIARY GENERATOR								
	EMERGENCY GENERATOR								
	ROTARY TRANSFORMER								
	AUXILIARY SWITCHBOARDS								
	ENGINE ROOM								
	BOILER ROOM	2	.003	3	.036	10	20	"	"
	ACCOMODATION								
	ENG'S SALOON ACCOM.	2	.0225	7	.064	31.5	100	"	"
	HOLD LIGHTING	2	.01	7	.044	11.75	100	"	"
	CARGO LANTERNS	2	.0225	7	.064	40.0	100	"	"
	NAVIGATION	2	.003	3	.036	2.9	350	"	"
	ARC ROOM	2	.01	7	.044	5.6	360	"	"
	WIRELESS	2	.007	7	.036	13.5	180	"	"
	SEARCHLIGHT								
	MASTHEAD LIGHT	2	.002	3	.029	4	600	"	"
	SIDE LIGHTS	2	.002	3	.029	4	600	"	"
	COMPASS LIGHTS								
	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								
	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								
	REFRIG. MACHINE	1	.01	7	.044	27	80	RUBBER	LEA B.B.
	OIL PURIFIER	1	.0045	7	.029	8	40	"	"

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 29.5.30.

**COMPASSES.**

Distance between electric generators or motors and standard compass 135 FEET.  
 Distance between electric generators or motors and steering compass 130  
 The nearest cables to the compasses are as follows:—  
 A cable carrying 2.9 Amperes 12 feet from standard compass 10 feet from steering compass.  
 A cable carrying 2 Amperes - feet from standard compass 6 feet from steering compass.  
 A cable carrying 2 Amperes 6 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 courses in the case of the standard compass, and nil degrees on all courses in the case of the steering compass.

RED WORKMAN CLARK (1928) LIMITED.

*Birmingham*

Builder's Signature. Date

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 constructed under special survey. The materials and workmanship are sound and good. It has been tried under working conditions with satisfactory results. In my opinion the vessel is eligible for notation "Electric Light."*

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

*JK*  
13/6/30.

Total Capacity of Generators 15 Kilowatts.

The amount of Fee ... £ 15 : 0 : 4. June 30.  
 Travelling Expenses (if any) £ : : 17.6.30

*John K. Williams.*  
Surveyor to Lloyd's Register of Shipping.

Committee's Minute

Assigned

*Elec Lt*

1m.127.—Transfer.  
 (The Surveyors are requested not to write on or below the space for Committee's Minute.)



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