

REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office 10 11 1928

Date of writing Report

19

When handed in at Local Office

19

Port of

Belfast

No. in Survey held at Belfast

Date, First Survey July 27 1927 Last Survey July 5 1928

Reg. Book.

41530 on the STEEL SC. KING WILLIAM.

Tons { Gross 5227
Net 3139

Built at Belfast

By whom built Harland & Wolff Ltd. Yard No. 765 When built 1928.

Owners King Line Ltd. (Dodd, Thomson & Co. Ltd.) Port belonging to London

Electric Light Installation fitted by Harland & Wolff Ltd. Contract No. 765 When fitted 1928.

System of Distribution Two wire direct current to masterboards & distribution boxes.

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

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

Position of Generators Port side of motor room, are they clear of all inflammable material Yes

is the ventilation in way of the generators satisfactory 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 On switchboard platform in motor 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

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

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

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 for each generator a double pole overload & reverse current circuit breaker with interlocked single pole switch for equalizer & for each outgoing feeder double pole fuses & single pole switch

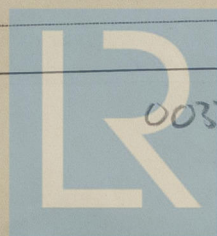
Instruments on main switchboard three ammeters two voltmeters arranged synchronising device for paralleling purposes.

Earth Testing, state what means are provided at the main switchboard for indicating the state of the insulation of the system

One set of earth lamps.

Switches, Circuit Breakers and Fusible Cut-outs, do these comply with the requirements of the Rules

Section and Distribution Boards, is the construction, protection, insulation, material, and position of these as per rule



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Lloyd's Register Foundation

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 *8 volts*

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 *Throughout ship least covered cables are clipped to perforated plating & where run along decks cables are drawn into pipes*
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 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 *yes: in properly constructed junction boxes*

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 *All portable apparatus earthed with a conductor equal in cross section to the working conductor*
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 —, 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 —

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	65	220	295	300	Diesel Engine	—	—	
AUXILIARY ...	—	—	—	—	—	—	—	—	
EMERGENCY ...	—	—	—	—	—	—	—	—	
ROTARY TRANSFORMER	—	—	—	—	—	—	—	—	

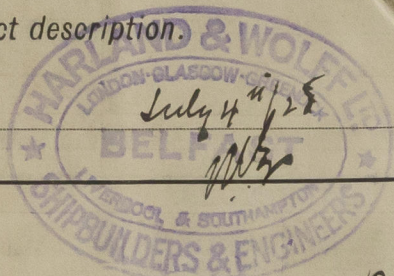
LIGHTING AND HEATING CONDUCTORS.									
Ref. No.	DESCRIPTION.	No. of Conductors.	Effective Area of each Conductor. Sq. Ins.	COMPOSITION OF STRAND.		Total Maximum Current. Ampères.	Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED.
				No.	Diameter.				
	MAIN GENERATOR...	2	2(15)	2(37)	0.72	295	90	Rubber	Lead covered
	AUXILIARY GENERATOR	—	—	—	—	—	—	—	" "
	EMERGENCY GENERATOR	—	—	—	—	—	—	—	" "
	ROTARY TRANSFORMER...	—	—	—	—	—	—	—	" "
	AUXILIARY SWITCHBOARDS	—	—	—	—	—	—	—	" "
	ENGINE ROOM	—	—	—	—	—	—	—	—
	BOILER ROOM	—	—	—	—	—	—	—	—
	Chart Room H.P. Power	1	2	37	0.083	184	430	Rubber	Lead covered
	Chart Room D.P. Power	1	0.04	19	0.052	66	80	"	" "
	Chart Room D. Lighting	1	0.01	7	0.044	28	80	"	" "
	Chart Room D. Heating	1	0.12	37	0.064	133	80	"	" "
	Chart Room C. Power	1	0.12	37	0.064	123	600	"	" "
	WIRELESS	1	0.07	7	0.036	4.55	370	Rubber	Lead covered
	SEARCHLIGHT	1	0.003	1	0.064	0.45	380	Rubber	Lead covered
	MASTHEAD LIGHT...	1	0.003	3	0.036	0.45	160	Rubber	" "
	SIDE LIGHTS	1	0.003	3	0.036	0.09	65	Rubber	" "
	COMPASS LIGHTS	1	0.003	3	0.036	0.09	65	Rubber	" "
	POOP LIGHTS	1	0.003	3	0.036	0.68	100	Rubber	Lead covered
	CARGO LIGHTS	1	0.003	3	0.036	0.45	90	Rubber	Lead covered
	ARC LAMPS	1	0.003	3	0.036	5.45	90	Rubber	Lead covered
	HEATERS	1	0.003	3	0.036	5.45	90	Rubber	Lead covered

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	2	0.03	19	0.044	55	150	Rubber	Lead covered
	MAIN BILGE LINE PUMPS	1	0.01	7	0.044	30	260	"	" "
	GENERAL SERVICE PUMP	—	—	—	—	—	—	—	—
	EMERGENCY BILGE PUMP	—	—	—	—	—	—	—	—
	SANITARY PUMP	—	—	—	—	—	—	—	—
	CIRC. SEA WATER PUMPS	2	0.03	19	0.044	51	200	Rubber	Lead covered
	CIRC. FRESH WATER PUMPS	—	—	—	—	—	—	—	—
	AIR COMPRESSOR	—	—	—	—	—	—	—	—
	FRESH WATER PUMP	—	—	—	—	—	—	—	—
	ENGINE TURNING GEAR	1	0.045	7	0.052	40	100	Rubber	Lead covered
	ENGINE REVERSING GEAR	2	0.04	19	0.052	68	240	Rubber	Lead covered
	LUBRICATING OIL PUMPS	1	0.007	7	0.036	17	200	"	" "
	OIL FUEL TRANSFER PUMP	1	0.02	37	0.083	184	344	"	" "
	WINDLASS	6	0.06	19	0.064	94	72	"	" "
	WINCHES, FORWARD	6	0.06	19	0.064	94	72	"	" "
	WINCHES, AFT	1	0.03	19	0.044	60	496	"	" "
	STEERING GEAR	2	0.003	3	0.036	8.2	24	"	" "
	WORKSHOP MOTOR	—	—	—	—	—	—	—	—
	VENTILATING FANS	2	0.003	3	0.036	8.5	250	"	" "
	Oil Purifiers	1	0.12	37	0.064	140	384	"	" "
	Harbouring Ketch	—	—	—	—	—	—	—	—

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.



Electrical Engineers.

Date July 4th 1928

COMPASSES.

Distance between electric generators or motors and standard compass 120 feet to generators & 64 feet to nearest motor

Distance between electric generators or motors and steering compass 120 feet to generator & 52 feet to nearest motor

The nearest cables to the compasses are as follows:—

A cable carrying 4.6 Ampères 7 feet from standard compass 7 feet from steering compass.

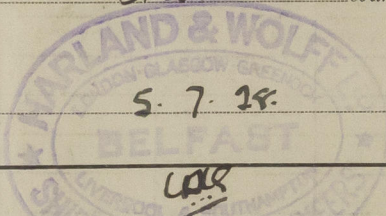
A cable carrying 16.3 Ampères 18 feet from standard compass 16 feet from steering compass.

A cable carrying 30.0 Ampères 26 feet from standard compass 18 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.



5. 7. 28.

Builder's Signature.

Date 5. 7. 28.

Is this installation a duplicate of a previous case *yes* If so, state name of vessel *King Stephen*

General Remarks (State quality of workmanship, opinions as to class, &c.)

This work was carried out under Special Survey. The materials and workmanship are sound and good. The installation has been fitted in accordance with the rules & tried out under full working conditions. The vessel is now eligible, in my opinion, for notation "Electric Light"

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

R.D.A.

11/7/28.

Total Capacity of Generators *195* Kilowatts

The amount of Fee ... £ *36 : 5* : *9-7-1928*

Travelling Expenses (if any) £ *25-7-1928*

R. Lee Annes.

Surveyor to Lloyd's Register of Shipping.

Committee's Minute **FRI. 13 JUL 1928**

Assigned *Elec Light*