

# REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

28 JUL 1930

Received at London Office

Date of writing Report

19

When handed in at Local Office

25-7-1930

Port of

Belfast

No. in Survey held at  
Reg. Book.

Belfast

Date, First Survey 24 May

Last Survey 23 July 1930

(Number of Visits.....6.....)

on the *Ch. V. "Silver Walnut"*Tons {  
Gross  
NetBuilt at *Belfast*By whom built *Harland & Wolff*Yard No. *883* When built *1930*Owners *Stanley & John Thompson*

Port belonging to

*London*Electric Light Installation fitted by *Harland & Wolff*Contract No. *883* When fitted *1930*

System of Distribution

*Two wire direct current, ring mains for heating, lighting & power*

Pressure of supply for Lighting

*220*

volts, Heating

*220*

volts, Power

*220* volts.

Direct or Alternating Current, Lighting

*Direct*

Power

*Direct**220*

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

*yes*

, 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*

Are the lubricating arrangements of the generators as per Rule

*yes*

Position of Generators

*Chain motor room port & starboard*

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

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 platform at aft end of 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

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 micanite 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,

accessibility of all parts

*yes**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. Over load and reverse current circuit breakers and triple pole switch with equalizer blade arranged to close first & open last.*

Instruments on main switchboard

*7*

ammeters

*5*

volts

arranged

for paralleling purposes.

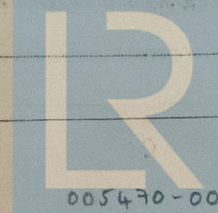
Earth Testing, state what means are provided at the main switchboard for indicating the state of the insulation of the system

*Earth lamps**connected to bus-bars by double pole switch & fuses.*

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*

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Lloyd's Register  
Foundation

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**Cables:** Single, twin, or multicore *Yes* 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 *6.5 Volts*

**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 *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 & braided cables clipped to perforated plating, lead covered armoured & braided cables protected by sheet metal covers in bulkheads.*  
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 *All joints are made 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 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 *Lead.*

**Earthing Connections,** state what earthing connections are fitted and their respective sectional areas *All metal portable fittings fitted to steelwork of ship are earthed with connector equivalent to working conductor.*  
All armoured cables earthed by bonding glands & clips, 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 *One 6 K.W. 220 Volt D.C. generator, driven by paraffin engine, & fitted in Engineer's store at end of switchboard platform.*

**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 *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 *Portable*, are their fittings as per Rule *Yes*

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

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 ...	4	100	220	455	300	Diesel Engine	Fuel Oil		
AUXILIARY ...	1	6	220	27.5	1000	Paraffin Engine	Paraffin		
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...	1	0.5	61	0.103"	455	100	Varnished Cambric	Lead Covered
	EQUALISER CONNECTIONS	1	0.5	61	0.103"	—	50	Do	Do
	AUXILIARY GENERATOR	1	0.01	7	0.044"	27.5	60	Rubber	Do
	EMERGENCY GENERATOR								
	ROTARY TRANSFORMER...								
	AUXILIARY SWITCHBOARDS								
	ENGINE ROOM								
	BOILER ROOM								
	Accommodation								
	LIGHTING RM. PANELS	1	0.03	19	0.044"	56	1200	Rubber	Lead Covered
	HEATING RM. PANELS	1	0.075	19	0.072"	157	830	Varnished Cambric	Armoured & Braided
	FORD. WINCH RM. PANEL	1	0.25	37	0.093"	411	1100	Do	Do
	MIDSHIP " "	1	0.15	37	0.072"	274	200	Do	Do
	RET " "	1	0.15	37	0.072"	274	600	Do	Do
	WINDLASS " "	1	0.25	37	0.093"	228	460	Do	Do
	REFRIG. MICH. PANEL	1	0.5	61	0.103"	430	70	Do	Lead Covered
	WIRELESS	1	0.007	7	0.036"	15	100	Rubber	Lead Covered
	SEARCHLIGHT	1	0.04	19	0.052"	53	75	Do	Lead Covered
	MASTHEAD LIGHT...	1	0.002	3	0.029"	0.18	624	Do	Armoured & Braided
	SIDE LIGHTS	1	0.002	3	0.029"	0.18	75	Do	Do
	COMPASS LIGHTS	1	0.002	3	0.029"	0.14	60	Do	Lead Covered
	POOP LIGHTS	1	0.002	3	0.029"	2.3	150	Do	Lead Covered
	CARGO LIGHTS	1	0.002	3	0.029"	2.27	80	Do	Armoured & Braided
	ARC LAMPS								
	HEATERS	1	0.003	3	0.036"	5.45	60	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	1	0.15	37	0.072"	144	220	Rubber	Lead Covered
	MAIN BILGE LINE PUMPS	1	0.04	19	0.052"	53	120	Do	Do
	GENERAL SERVICE PUMP	1	0.0145	7	0.052"	33	350	Do	Do
	EMERGENCY BILGE PUMP								
	SANITARY PUMP								
	CIRC. SEA WATER PUMPS	2	0.10	19	0.083"	102	210	Do	Do
	CIRC. FRESH WATER PUMPS								
	AIR COMPRESSOR	1	0.75	91	0.103"	560	240	Varnished Cambric	Do
	FRESH WATER PUMP								
	ENGINE TURNING GEAR	2	0.0225	7	0.064"	42	70	Rubber	Do
	ENGINE REVERSING GEAR								
	LUBRICATING OIL PUMPS	2	0.15	37	0.072"	134	90	Do	Do
	OIL FUEL TRANSFER PUMP	1	0.0145	7	0.052"	35	300	Do	Do
	WINDLASS	1	0.15	37	0.072"	248	100	Varnished Cambric	Lead Covered
	WINCHES, FORWARD	6	0.075	19	0.072"	137	150	Do	Armoured & Braided
	WINCHES, AFT	5	0.075	19	0.072"	137	90	Do	Do
	WINCHES, MIDSHIPS	2	0.075	19	0.072"	137	120	Do	Do
	STEERING GEAR								
	(a) MOTOR GENERATOR...								
	(b) MAIN MOTOR	2	0.075	19	0.072"	89	660	Rubber	Do
	WORKSHOP MOTOR								
	VENTILATING FANS	2	0.003	3	0.036"	11	180	Do	Lead Covered
	LATHE	1	0.002	3	0.029"	5.4	40	Do	Do
	DRILL	1	0.003	3	0.036"	8.4	60	Do	Do
	GRINDSTONE	1	0.003	3	0.036"	9	60	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.

23/7/30

Electrical Engineers.

Date

#### COMPASSES.

Distance between electric generators or motors and standard compass

132 feet.

Distance between electric generators or motors and steering compass

130 feet.

The nearest cables to the compasses are as follows:—

A cable carrying 3.65 Ampères 7 feet from standard compass 7 feet from steering compass.

A cable carrying 5.45 Ampères 15 feet from standard compass 13 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

all

course in the case of the standard

compass, and

Nil

degrees on

All

course in the case of the steering compass.

13.7.30.

Builder's Signature.

Date 23.7.30

Is this installation a duplicate of a previous case

Yes.

If so, state name of vessel

M.V. Silvercypress

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

This installation has been fitted under Special Survey and in accordance with the rules. The materials and workmanship are sound and good. Satisfactory trials under full working conditions were made. In my opinion the vessel is eligible for notation "Electric Light".

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

J. 29/7/30.

Total Capacity of Generators 406 Kilowatts.

The amount of Fee ... £ 41 : 13 : 25 July 1930

Travelling Expenses (if any) £ : : 30.7.30

R. Lee Ames

Surveyor to Lloyd's Register of Shipping.

Committee's Minute

WED. 6 AUG 1930

Assigned

Elec. Lt.



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