

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office

Date of writing Report 19 When handed in at Local Office 19 Port of Sunderland

No. in Survey held at Sunderland. Date, First Survey May 5 Last Survey June 17 1927
Reg. Book. (Number of Visits... 9...)

33797 on the M.V. "Silverguava" Tons { Gross 5294
Net 3088

Built at Sunderland By whom built Sir J Haing + Sons Ltd. Yard No. 696 When built 1927

Owners Silver Line Ltd. Port belonging to London

Electric Light Installation fitted by Messrs The Sunderland Forge + Eng Co Contract No. When fitted 1927

Is the Vessel fitted for carrying Petroleum in bulk no

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 temperature rise 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

Have certificates of test results for machines under 100 kw. been submitted and approved —

Have machines over 100 kw. been inspected by the Surveyors during manufacture and testing —

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 Engine room bottom platform port + stbd., 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 bottom platform S^d side.

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

is it of an approved type 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

is the non-hygroscopic insulating material of an approved type 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, temperature rise of omnibus bars yes

individual fuses to voltmeter, pilot or earth lamp yes, are moving parts of switches alive in the "off" position no

are all screws and nuts securing connections effectively locked yes are any fuses fitted on the live side of switches no

Main Switchgear, description of switchgear for each generator and each outgoing circuit, and arrangement of equalizer switches D P O/load, Rev Cur C.B for each generator + T.P. Switch. D P C B with O/load for steering gear, refrig + engine room aux. D P S + fuses on each outgoing circuit.

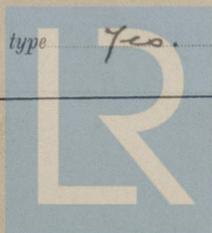
Are turbine driven generators fitted with emergency trip switch as per rule — Are cupboards or compartments containing switchboards composed of fire-resisting material or lined with approved material —

Instruments on main switchboard 7 ammeters 5

voltmeters — synchronising device for paralleling purposes. For compound machines is the ammeter connected on the opposite pole to equaliser connection yes

Earth Testing, state what means are provided at the main switchboard for indicating the state of the insulation of the system Earth lamp switch + fuse on each pole.

Switches, Circuit Breakers and Fusible Cut-outs, do these comply with the requirements of the Rules yes are the fusible cutouts of an approved type yes have the reversed



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current protection devices been tested under working conditions 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 wire are the cables insulated and protected as per Tables IV, V, X or XI of the Rules. Yes

If the cables are insulated otherwise than as per Rule, are they of an approved type — **Fall of Pressure**, state maximum between bus bars and any point of the installation under maximum load 4-8V lighting, 8.6V power **Cable Sockets**, are the ends of all cables having a sectional area of 0.04 square inch and above provided with soldering sockets Yes **Paper Insulated and Varnished Cambric Insulated Cables**.

If conductors are paper or varnished cambric insulated, is the dielectric at the exposed ends of the conductor protected from moisture by being suitably sealed with insulating compound Yes, or waterproof insulating tape 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. Are cables in machinery spaces, galleys, laundries, bathrooms and lavatories lead covered or run in conduit head cov, atm or braided

Support and Protection of Cables, state how the cables are supported and protected Main L.C.A+B clipped to iron plate with galv iron clips + protected by cover plates - L.C+B cables clipped up in machinery spaces + etc.

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, are the cables and fittings in accordance with the special requirements Yes

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 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 —, 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 fitted

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 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 —

are all fittings suitably ventilated —, are all switches and lampholders constructed wholly of non-ignitable, non-absorbent materials —

Heating and Cooking Appliances, are they constructed and fitted as per Rule Yes, are air heaters constructed and fitted as per Rule Yes

Searchlight Lamps, No. of Resistance + Conn only, whether fixed or portable if fitted —, 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 —

have machines of over 100 BHP been inspected by the Surveyors during manufacture and testing — **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 — **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 — are all fuses of the filled cartridge type — are they of an approved type —

If portable lamps for use in dangerous spaces are supplied, are they of a self-contained, battery-fed type approved by the Home Office —

Spare Gear, if the vessel is for open sea service have spares been supplied as per Rule Yes

PARTICULARS OF GENERATING PLANT.

DESCRIPTION OF GENERATOR	No. of	RATED AT				DRIVEN BY	WHERE DRIVEN BY AN INTERNAL COMBUSTION ENGINE	
		Kilowatts.	Volts.	Amperes.	Revs. per Min.		Fuel Used.	Flash Point of Fuel.
MAIN	4	100	220	454.5	300	Diesel Oil Engine		
AUXILIARY	1	6	220	27.2	1000	Petrol Paraffin Engine		
EMERGENCY								
ROTARY TRANSFORMER								

GENERATOR, LIGHTING AND HEATING CONDUCTORS.

DESCRIPTION.	CONDUCTORS.		COMPOSITION OF STRAND.		TOTAL MAXIMUM CURRENT AMPERES.		Approximate Length (Lead and Return) Feet.	Insulated with	HOW PROTECTED.
	No. per Pole.	Total Nominal Area per Pole Sq. Ins.	No.	Diameter.	Circuit.	Rule.			
MAIN GENERATOR	2	.4064	61	.093	454.5	417	280	V.C.	L.C.+B
EQUALISER CONNECTIONS	1	.4064	61	.093	454.5	417	140	V.C.	50
AUXILIARY GENERATOR	1	.01046	7	.044	27.2	31	210	V.I.R.	50
EMERGENCY GENERATOR									
ROTARY TRANSFORMER MOTOR GENERATOR									
ENGINE ROOM									
BOILER ROOM	2	.0396	19	.052	100.1	94	130	V.C.	L.C.A+B.
AUXILIARY SWITCHBOARDS									
ACCOMMODATION									
WIRELESS	1	.00701	7	.036	15	24	65	V.I.R.	L.C.+B
SEARCHLIGHT	1	.0396	19	.052	55	64	48	50	50
MASTHEAD LIGHT	1	.00322	1	.064	.45	12.9	620	50	50
SIDE LIGHTS	1	.00194	3	.029	.45	7.8	90	50	50
COMPASS LIGHTS	1	.00194	3	.029	.2	4.8	20	50	50
STERN LIGHTS	1	.00194	3	.029	.45	7.8	500	50	50
CARGO LIGHTS	1	.00194	3	.029	3.2	7.8	60	50	50
ARC LAMPS									
HEATERS	1	.0396	19	.052	84.4	94	130	V.C.	L.C.A+B.

MOTOR CONDUCTORS.

DESCRIPTION.	No. of Motors.	CONDUCTORS.		COMPOSITION OF STRAND.		TOTAL MAXIMUM CURRENT AMPERES.		Approximate Length (Lead and Return) Feet.	Insulated with	HOW PROTECTED.
		No. Per Pole.	Total Nominal Area per Pole Sq. Ins.	No.	Diameter.	In Circuit.	Rule.			
BALLAST PUMP	1	1	.1478	37	.072	138	152	285	V.I.R.	L.C.+B
MAIN BILGE LINE PUMPS	1	1	.01462	7	.052	34	37	276	50	50
GENERAL SERVICE PUMP	1	1	.01462	7	.052	34	37	258	50	50
EMERGENCY BILGE PUMP										
SANITARY PUMP										
CIRC. SEA WATER PUMPS	1	1	.1478	37	.072	138	152	140	50	50
CIRC. FRESH WATER PUMPS	1	1	.4064	61	.093	346	417	140	V.C.	50
AIR COMPRESSOR	1	1	.1478	37	.072	138	152	128	V.C.	50
FRESH WATER PUMP										
ENGINE TURNING GEAR	1	1	.1009	19	.083	116	118	255	V.I.R.	50
ENGINE REVERSING GEAR										
LUBRICATING OIL PUMPS	2	1	.01462	7	.052	34(each)	37	120	V.I.R.	50
OIL FUEL TRANSFER PUMP	1	1	.01462	7	.052	34	37	270	50	50
WINDLASS	1	1	.1478	37	.072	228	222	72	V.C.	L.C.A+B
WINCHES, FORWARD	4	1	.1009	19	.083	124(each)	118	60(each)	V.I.R.	50
Midships	2	1	.1009	19	.083	124(each)	118	60(each)	50	50
WINCHES, AFT	5	1	.1009	19	.083	124(each)	118	90(each)	50	50
STEERING GEAR—										
(a) MOTOR GENERATOR										
(b) MAIN MOTOR	1	1	.06	19	.064	78	83	530	50	50
WORKSHOP MOTOR	1	1	.00455	7	.029	9.5	18.2	295	50	L.C.+B
VENTILATING FANS Refrig.	2	1	.01462	7	.052	34(each)	37	80(each)	50	50
Aux fuel pump	1	1	.1009	19	.083	118	118	76	50	50
Jacket water pump	2	1	.1478	37	.072	138(each)	152	108(each)	50	50
Sharples	3	1	.00455	7	.029	10(each)	18.2	166(each)	50	50
Clean oil pump	1	1	.00455	7	.029	9.5	18.2	190	50	50
Crane	1	1	.00455	7	.029	16.5	18.2	110	50	50
Refrig motor	1	1	.01046	7	.044	25	31	255	50	50
CO2 Machine	1	1	.4064	61	.093	395	417	35	V.C.	50
Rome pump	2	1	.01462	7	.052	34(each)	37	50(each)	V.I.R.	50
Refrig Circ pump	1	1	.01462	7	.052	34	37	225	50	50
Aux Jacket pump	2	1	.00455	7	.029	15(each)	18.2	100(each)	50	50

All Conductors are of annealed copper conforming to British Standard Specification No. 7 (or International Electro-technical Commission Publication No. 28).

The Insulated Conductors are guaranteed to withstand the immersion and resistance tests specified in the Rules.

The foregoing is a correct description.

W. J. Sunderland & Sons Ltd
Rotton Sunderland

Electrical Engineers.

Date *June 1927.*

COMPASSES.

Distance between electric generators or motors and standard compass *107 feet*

Distance between electric generators or motors and steering compass *96 feet*

The nearest cables to the compasses are as follows:—

A cable carrying *4.3* Ampères *15* feet from standard compass *15* feet from steering compass.

A cable carrying *.2* Ampères *10* feet from standard compass *led into* feet from steering compass.

A cable carrying *.2* Ampères *led into* feet from standard compass *10* 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.

MR JAMES LAING & SONS, LIMITED.

Blairman

Builder's Signature.

Date *June 19 27.*

Is this installation a duplicate of a previous case *yes*. If so, state name of vessel *Silver Maple*.

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

The above instⁿ is in accordance with the Society's Rules. The vessel is eligible in my opinion for notation elec light - wireless

*Noted
W.T. Badger
6/8/35.*

Total Capacity of Generators *406* Kilowatts.

The amount of Fee ... £ *41 : 13* : *16 June 19 27*

Travelling Expenses (if any) £ : : *30 June 19 27*

W.T. Badger
Surveyor to Lloyd's Register of Shipping.

Committee's Minute

Assigned

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



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