

# REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

16 JUL 1936

Date of writing Report

19

When handed in at Local Office

10

Port of

Received at London Office

SUNDERLAND.

15 JULY 1936

No. in Survey held at

Sunderland. Date, First Survey

26/5/36

Last Survey

7/7/1936

Reg. Book.

Supp.

40087 on the

S.S. "St HELENA."

Tons

Gross 4313

Net 2605

Built at

Sunderland.

By whom built

J. L. Thompson &amp; Co. Yard No. 573

When built 1936

Owners

St. Quentin Shipping Co. Ltd.

Port belonging to

Newport.

Electric Light Installation fitted by

The Sunderland Forge &amp; Eng. Co. Ltd.

Contract No. 573.

When fitted 1936

Is the Vessel fitted for carrying Petroleum in bulk

No.

System of Distribution

Double wire

Pressure of supply for Lighting

110

volts, Heating

volts, Power

440

volts.

Direct or Alternating Current. Lighting

Direct

Power

110 k.v.

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

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

Yes

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 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

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 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

Yes

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

Are the fittings as per Rule regarding:— spacing or shielding of live parts

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

B.P. &amp; D.P. fuses on dynamo mains. S.P. switch + D.P. 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

1

ammeters

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

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

Lamps Coupled to &amp; through earth &amp; fuses.

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

W1153-0066 1/2

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Lloyd's Register  
Foundation



E.S.D.

current protection devices been tested under working conditions

construction, protection, insulation, material, and position of these as per rule

Cables: Single, twin, concentric, or multicore single 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 Yes.

any point of the installation under maximum load 3-8 volts.

area of 0.04 square inch and above provided with soldering sockets Yes.

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.

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 Yes.

Support and Protection of Cables, state how the cables are supported and protected: L.C.A.B. clipped up to beams in linen decks

Acc. L.C. cables clipped up with brass clips.

If cables are run in wood casings, are the casings and caps secured by screws Yes, are the cap screws of brass Yes, are the cables run in separate grooves Yes.

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 Yes.

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.

position and method of control of the emergency supply and how the generator is driven Yes.

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 stakeholds 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 Yes.

are any fittings placed in spaces where inflammable or explosive dust or gases are liable to be present, if so, how are they protected Yes.

where are the controlling switches situated Yes.

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

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 Yes, whether fixed or portable Yes, are their fittings as per Rule Yes.

Are Lamps, other than searchlight lamps, No. of Yes, are their live parts insulated from the frame or case Yes, are their fittings as per Rule Yes.

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.

material, are the motors of the totally enclosed, pipe ventilated, forced draught, drip or flame proof type Yes.

if not of this type, state distance of the combustible material horizontally or vertically above the motors Yes and Yes.

have machines of over 100 BHP been inspected by the Surveyors during manufacture and testing Yes.

field and motor speed regulators, starters and controllers constructed and fitted as per Rule Yes.

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.

are all fuses of the fitted cartridge type Yes, are they of an approved type Yes.

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

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	1	12.0	110	114	950	Single cylinder steam engine		
AUXILIARY								
EMERGENCY								
ROTARY TRANSFORMER								

## GENERATOR, LIGHTING AND HEATING CONDUCTORS.

DESCRIPTION	CONDUCTORS		COMPOSITION OF STRAND		TOTAL MAXIMUM CURRENT		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	1	.06	19	.064	114/122	12	Y.C.	L.C.A+B.	
EQUALISER CONNECTIONS									
AUXILIARY GENERATOR									
EMERGENCY GENERATOR									
ROTARY TRANSFORMER									
ENGINE ROOM									
BOILER ROOM	1	.0045	7	.029	8.64/18.2	30	Y.I.R	L.C.A+B.	
AUXILIARY SWITCHBOARDS									
ACCOMMODATION	1	.04	19	.052	48.4/64	186	50	50	
"	1	.007	7	.036	20.4/24	130	50	50	
WIRELESS	1	.0225	7	.064	5.0/46	198	50	50	
SEARCHLIGHT	1	.003	1	.064	.4/12.9	230	50	50	
MASTHEAD LIGHT	1	.0015	1	.064	.4/6.1	45	50	L.C	
SIDE LIGHTS	1	.0015	1	.064	.25/6.1	35	50	L.C	
COMPASS LIGHTS	1	.003	1	.064	.4/12.9	340	50	L.C.A+B.	
STEERING LIGHTS	1	.003	1	.064	.4/12.9	160	50	50	
ARC LAMPS									
HEATERS									

## MOTOR CONDUCTORS.

DESCRIPTION	No. of Motors	CONDUCTORS		COMPOSITION OF STRAND		TOTAL MAXIMUM CURRENT		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										
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	2	1	.0045	7	.029	18.0	18.2	30	Y.I.R	L.C.A+B.
Oil Pumps	1	1	.007	7	.036	22.5	24.0	30	50	50
Lathe Motor	1	1	.002	3	.029	2.0	7.8	168	50	50
Tachometer										



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.

*Sunderland Forge & Ship Co. Ltd.*  
*A. S. Gurney*

Electrical Engineers.

Date *7/7/36.*

#### COMPASSES.

Distance between electric generators or motors and standard compass

*260 feet*

Distance between electric generators or motors and steering compass

*248 feet*

The nearest cables to the compasses are as follows:—

A cable carrying *25* Amperes *12* feet from standard compass *on the* feet from steering compass.

A cable carrying *25* Amperes *on the* feet from standard compass *12* feet from steering compass.

A cable carrying *25* Amperes *on the* feet from standard compass *12* 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.

JOSEPH L. THOMPSON & SONS, LTD.

*R. C. Thompson*

Builder's Signature:

Date *9<sup>th</sup> July 1936*

Managing Director

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.)

*The above inst<sup>n</sup> has been fitted out under special survey. The workmanship & materials used are good. On completion the dynamo, governor, main board, fuses, cables & fittings were examined & tested under working conditions & found suitable for a classed vessel. The insulation resistance tested & found good. This vessel is eligible in my opinion for notation of E.S.D.*

*Noted*

*YRM*

*29.7.36*

Total Capacity of Generators *12* Kilowatts.

The amount of Fee ...

£ *12* : -

When applied for,

*18 JULY 1936*

Travelling Expenses (if any) £

When received,

*18.7.36*

*W. T. Badger*

Surveyor to Lloyd's Register of Shipping.

Committee's Minute

*FRI. 24 JUL 1936*

Assigned

*See J. Machy Rph.*