

Rpt. 13.

No. 10,183

REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office

4 JUN 1929

Date of writing Report

19

When handed in at Local Office

3rd June 1929

Port of Belfast

No. in Survey held at

Belfast

Date, First Survey

20th Feb.

Last Survey

29th May 1929

Reg. Book.

(Number of Visits.....)

on the Steel twin Sc. SURINAM

Tons

Gross

Net

Built at Belfast

By whom built

Harland & Wolff Ltd.

Yard No. 863

When built 1929.

Owners Lloyd Shipping Co. Ltd. (A. Wei & Co. Mgrs.)

Port belonging to

London

Electric Light Installation fitted by

Harland & Wolff Ltd.

Contract No. 863

When fitted 1929.

System of Distribution Two wire direct current to distribution boxes.

Pressure of supply for Lighting 110 volts, Heating — volts, Power 110 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

No.

is an adjustable regulating resistance fitted in series with each shunt field

No.

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

In Engine Room Aft.

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 In engine room on aft bulk head.

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

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

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

Each generator is connected to separate sets of bus-bars, with double pole switches & fuses & each out-going circuit has double pole change over switch & double pole fuses.

Instruments on main switchboard

two

ammeters

one

volts

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

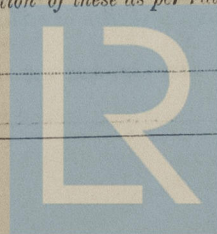
Earth indicator.

lamps with change over switch to each set of bus-bars.

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



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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 *50 lbs.*

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 *Cables are lead covered & passed through steel piping along deck*

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 portable fittings, sockets etc. fitted other than to the steel work of the ship are provided with an earthing connection equivalent to 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*

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 *Yes*

Special gas-light fitting, how are the cables led *The main cables in this space - Branch wires in lead covered steel armoured & braided clipped to steel work of ship; where are the controlling switches situated Passage in food accommodation*

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 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

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.	Amperes.	Revs. per Min.		Fuel Used.	Flash Point of Fuel.
MAIN	2	7	110	63.5	620/600	Enclosed type vertical steam engine 6"x4" cylinders	-	-
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. Amperes.	Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED.
				No.	Diameter.				
	MAIN GENERATOR...	2	0.04	19	.032"	63.5	30	Rubber	Lead Covered
	EQUALISER CONNECTIONS	-	-	-	-	-	-	-	-
	AUXILIARY GENERATOR	-	-	-	-	-	-	-	-
	EMERGENCY GENERATOR	-	-	-	-	-	-	-	-
	ROTARY TRANSFORMER...	-	-	-	-	-	-	-	-
	AUXILIARY SWITCHBOARDS	-	-	-	-	-	-	-	-
	ENGINE ROOM	2	0.003	3	.036"	12.0	78	Rubber	Lead Covered
	BOILER ROOM	-	-	-	-	-	-	-	-
	ACCOMMODATION AFT... & GALLEY BLOWERS	2	0.007	7	.036"	24.5	104	"	" "
	NAVIGATION & WIRELESS	2	0.007	7	.036"	9.07	540	"	" "
	FOOD ACCOMMODATION & PUMP ROOM	2	0.01	7	.044"	13.3	525	"	" "
	WIRELESS	2	0.007	7	.036"	2.27	536	Rubber	Lead Covered
	SEARCHLIGHT	-	-	-	-	-	-	-	-
	MASTHEAD LIGHT...	2	0.003	3	.036"	0.9	240	Rubber	Lead covered armoured & braided
	SIDE LIGHTS	2	0.003	3	.036"	0.9	96	"	"
	COMPASS LIGHTS	2	0.003	3	.036"	0.36	56	"	Lead Covered
	POOP LIGHTS	-	-	-	-	-	-	-	-
	CARGO LIGHTS	3	0.0048	110	.0076"	1.36	200	Rubber	C.T.S.
	ARC LAMPS	-	-	-	-	-	-	-	-
	HEATERS	-	-	-	-	-	-	-	-

MOTOR CONDUCTORS.

Ref. No.	DESCRIPTION.	No. of Motors.	Effective Area of each Conductor. Sq. Ins.	COMPOSITION OF STRAND.		Total Maximum Current. Amperes.	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	-	-	-	-	-	-	-	-
	BLOWER MOTORS FOR GALLEY RANGE	2	0.003	3	.036"	5.6	75	Rubber	Lead Covered
	C.O. MACHINE	1	0.007	7	.036"	22	72	"	" "
	BRINE PUMP	1	0.003	3	.036"	5.15	58	"	" "



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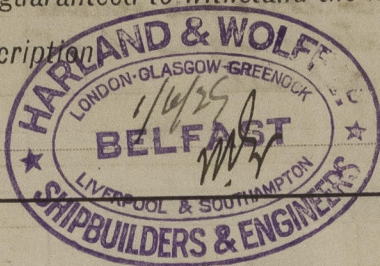
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All Conductors are of annealed copper conforming to British Standard Specification No. 7.

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

The foregoing is a correct description of



Electrical Engineers.

Date June 6th/29

COMPASSES.

Distance between electric generators or motors and standard compass

228 Feet.

Distance between electric generators or motors and steering compass

223 Feet.

The nearest cables to the compasses are as follows:—

A cable carrying 9 Ampères 10 feet from standard compass 5 feet from steering compass.

A cable carrying 14 Ampères 22 feet from standard compass 14 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.



Builder's Signature.

Date June 6/29

Is this installation a duplicate of a previous case? If so, state name of vessel

"Tamara" "Ule"

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

This installation has been made under special survey. The materials and workmanship are good. It was tried out during the official trials with satisfactory results. In my opinion the vessel is now eligible for notation "Electric Light".

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

Run

4.6.29

Total Capacity of Generators 14 Kilowatts.

The amount of Fee ... £ 14 : — : When applied for, 3-6-1929

Travelling Expenses (if any) £ : : When received, 9-7-29

R. Lee Anneson

Surveyor to Lloyd's Register of Shipping.

Committee's Minute

Assigned

Elec. Light



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