

# REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

No. 96584

Date of writing Report

19

When handed in at Local Office

17/8/38

Received at London Office

AUG 23 1938

No. in Survey held at

Newcastle

Reg. Book. Supt

88902 on the S.S. "La Carriere"

Date, First Survey

9 June

Last Survey

3 Aug 1938

(Number of Visits... 6)

Tons

Gross 5685

Net 3231

Built at

Newcastle

By whom built

Swan Hunter &amp; Wigham R &amp; Ld

Yard No. 1555

When built 1938

Owners Trinidad Leaseholds Ltd.

Port belonging to

London

Electric Light Installation fitted by Swan Hunter &amp; Wigham R &amp; Ld

Contract No. 1555 When fitted 1938

Is the Vessel fitted for carrying Petroleum in bulk

Yes.

## System of Distribution

Double wire

Pressure of supply for Lighting

110

volts, Heating

110

volts, Power

110

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

No

, 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

Yes

Have certificates for generators under 100 kw. been supplied and approved

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 45 KW Stbd, 25 KW Port

in way of the generators satisfactory

Yes

are they clear of all inflammable material

Yes

, is the ventilation

woodwork or other combustible material, state distance of same horizontally from or vertically above the generators

Yes

if situated near unprotected

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

, 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.S. + D.P. fuses for each generator. D.P.C.O.S. + 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

2

ammeters

2

voltmeters

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

E lamps coupled to E through switches &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



current protection devices been tested under working conditions. — are all fuses labelled as per rule. *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* are the cables insulated and protected as per Tables IV, V, X, XI, XII or XIII of the Rules. *Yes*

If the cables are insulated otherwise than as per Rule, are they of an approved type. — *3 volts* Fall of Pressure, state maximum between bus bars and any point of the installation under maximum load. *Yes* Cable Sockets, are the ends of all cables having a sectional area of 0.04 square inch and above provided with soldering sockets.

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. — or waterproof insulating tape. — 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 laid under machines or floorplates. *Yes* if so, are they adequately protected. — *LC + A*

Are cables in machinery spaces, galleys, laundries, bathrooms and lavatories lead covered or run in conduit. *LC + A*

Support and Protection of Cables, state how the cables are supported and protected. *Main cables LC + A clipped along fore to aft gangway; in machinery spaces. LC + B in all other spaces.*

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.

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. —

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*

are they ventilated as per Rule. *Yes*

Fittings, are all fittings on weather decks, in storerooms and engine rooms and wherever exposed to drip or condensed moisture, watertight

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. *heavy well glasses*

*protected by metal guards.*

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

*protected by heavy prismatic well glasses & strong guards.* how are the cables led

*through gas tight tubes.*

where are the controlling switches situated. *In midship pastray*

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. —

Searchlight Lamps, No. of *one* whether fixed or portable. *portable* 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* 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. — have certificates for all motors for

essential services been supplied and approved. — 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* are all fuses of the filled 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 flameproof type approved for use in dangerous spaces. *Yes*

Spare Gear, if the vessel is for open sea service have spares been supplied as per Rule. *Yes* are they suitably stored in dry situations. *Yes*

## PARTICULARS OF GENERATING PLANT.

DESCRIPTION OF GENERATOR.	No. of	RATED AT				DRIVEN BY	WHERE DRIVEN BY AN INTERNAL COMBUSTION ENGINE.	
		Kilowatts.	Volts.	Amps.	Revs. per Min.		Fuel Used.	Flash Point of Fuel.
MAIN	1	45	110	410	688	Diesel Engine		
AUXILIARY	1	25	110	228		Steam		
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	.75	91	.103	410	461	40	YIR	LC + A
EQUALISER CONNECTIONS									
AUXILIARY GENERATOR	1	.3	37	.103	228	240	60	50	50
EMERGENCY GENERATOR									
ROTARY TRANSFORMER									
ENGINE ROOM	1	.01	7	.044	19	31	150	50	50
BOILER ROOM	1	.01	7	.044	19	31	160	50	50
AUXILIARY SWITCHBOARDS									
Navigation	1	.01	7	.044	7	31	834	50	50
Shore Supply	1	.1	19	.083	100	118	290	50	50
Galley Electric Oven	1	.12	37	.064	134	130	150	50	50
Transport Vent Fans	1	.06	19	.064	72	83	120	50	50
ACCOMMODATION									
Aft Acc. Stbd	1	.02	7	.064	30	46	180	50	50
" " Port	1	.01	7	.044	24	31	220	50	50
Capt + mid ship port	1	.04	19	.082	28	64	765	50	50
Midship Stbd + foremast	1	.06	19	.064	46	83	765	50	50
(main) Refrig + workshop motor	1	.06	19	.064	78	83	80	50	50
WIRELESS	1	.0225	7	.064	20	46	810	50	50
SEARCHLIGHT	1	.002	3	.029	2.0	7.8	100	50	50
MASTHEAD LIGHT	1	.002	3	.029	.5	7.8	834	50	50
SIDE LIGHTS	1	.002	3	.029	.5	7.8	100	50	LC + B
COMPASS LIGHTS	1	.002	3	.029	.3	7.8	50	50	50
DECK LIGHTS	1	.002	3	.029	.5	7.8	900	50	LC + A
CARGO LIGHTS									
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	1	1	.0145	7	.082	32	37	60	YIR	LC + A
VENTILATING FANS 2.75HP	2	1	.007	7	.036	22	24	60	50	50
50 1.5HP	1	1	.007	7	.036	22	24	60	50	50
Refrigerator pump	1	1	.003	3	.036	6	12	70	50	50
Refrigerator 5.H.P.	1	1	.0225	7	.064	40	46	60	50	50
Galley Blower	1	1	.0045	7	.029	16	18	30	50	50

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W196-0204 (2/2)

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The Electrical Equipment is installed in accordance with the approved plans.

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

The foregoing is a correct description.

FOR SWAN, HUNTER, & WIGHAM RICHARDSON, LTD.

Electrical Engineers.

Date August 13<sup>th</sup> 1938

#### COMPASSES.

Minimum distance between electric generators or motors and standard compass

400 feet

Minimum distance between electric generators or motors and steering compass

408 feet.

The nearest cables to the compasses are as follows:—

A cable carrying 3 Ampères on the feet from standard compass 12 feet from steering compass.

A cable carrying 3 Ampères 12 feet from standard compass on the 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. So he filled in after adjustment of compasses.

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 degrees on course in the case of the standard

compass, and degrees on course in the case of the steering compass.

FOR SWAN, HUNTER, & WIGHAM RICHARDSON, LTD.

R. I. Clark

Builder's Signature.

Date Aug. 13<sup>th</sup> 1938.

Is this installation a duplicate of a previous case Asst. Chief Draughtsman. 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 materials used & workmanship are good. The inst<sup>n</sup> has been tested throughout under working conditions & found satisfactory. The insulation resistance is good. This vessel is eligible in my opinion for notation. D.F., E.S.D.

Mid L.H.  
30/8/38

Total Capacity of Generators 70 Kilowatts.

The amount of Fee ... £ 29 : 10 : When applied for, 19.

Travelling Expenses (if any) £ : : When received, 1/9 1938.

Committee's Minute FRI 2 SEP 1938

Assigned

See F.C. Rpt.

W. T. Badger

Surveyor to Lloyd's Register of Shipping.



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