

No. 87874

# REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office

21 DEC 1931

Writing Report

19

When handed in at Local Office

11/12/103

Port of NEWCASTLE ON TYNE

No. and Book.

Survey held at NEWCASTLE ON TYNE

Date, First Survey 10<sup>th</sup> March/31

Last Survey 1<sup>st</sup> Dec 1931

(Number of Visits 8)

on the

M.V. CARDIUM.

Tons { Gross 8236  
Net 4828

at NEWCASTLE ON TYNE

By whom built SWAN HUNTER & W.R. LTD

Yard No. 1455

When built 1931

rs ANGLO-SAXON PETROLEUM CO LTD.

Port belonging to LONDON

Electric Light Installation fitted by SWAN HUNTER & W.R. LTD

Contract No. 1455

When fitted 1931

Vessel fitted for carrying Petroleum in bulk

YES.

m of Distribution

Double Wire

Working pressure of supply for Lighting

110

volts, Heating

volts, Power

110

volts.

Hydraulic test or Alternating Current, Lighting

Direct

Power

ernating current system, state frequency of periods per second

the Automatic Governor been tested and found efficient when the whole load is suddenly thrown on or off

Yes.

erators, do they comply with the requirements regarding rating

Yes

, are they compound wound

Yes

ey over compounded 5 per cent.

Yes

, if not compound wound state distance between each generator

more than one generator is fitted are they arranged to run in parallel

No

, is an adjustable regulating resistance fitted in

with each shunt field

Yes

all terminals accessible, clearly marked, and furnished with sockets

Yes

, are they so spaced or shielded that they cannot be accidentally earthed,

tion of Generators

Engine Room, Starboard Side.

ventilation in way of the generators satisfactory

Yes

, are they clear of all inflammable material

Yes

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

their axes of rotation fore and aft

Yes

are the prime movers and

thing, are the bedplates and frames of the generating plant efficiently earthed

Yes

respective generators in metallic contact

Yes

in 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

use 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

they protected from mechanical injury and damage from water, steam or oil

Yes

, if situated near unprotected

work or other combustible material, state distance of same horizontally from or vertically above the switchboards

they constructed wholly of durable, non-ignitable non-absorbent materials

Yes

, is all insulation of high dielectric strength and of

manently high insulation resistance

Yes

, if semi-insulating material is used, are all conducting parts insulated from the slab

h mica or micanite or other non-hygroscopic insulating material, and the slab similarly insulated from its framework

Yes

is the frame effectively earthed

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

, proportion of omnibus

, 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

breakers for each Generator. D.P. Change over switches and 2ed type fuses for each outgoing circuit

struments on main switchboard

2

ammeters

2

voltmeters

synchronising device for paralleling purposes.

Register of 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 earth through switches and fuses.

switches, Circuit Breakers and Fusible Cut-outs, do these comply with the requirements of the Rules

Yes

oint Boxes Section and Distribution Boards, is the construction, protection, insulation, material, and position of these as per rule

Yes.

002901-002915-0066 2



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 2.5 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 —

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 L.C. in Accommodation. L.C.A. in galvanized steel piping under Fore & Aft gangways. L.C.A. clipped up in machinery 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, if lights are fitted, 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

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 —

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. In Pump Room in gas-tight fittings fitted in recesses only accessible from deck. how are the cables led In galvanized steel piping

where are the controlling switches situated In midship 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 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 ...	2	16	110	145	390	{ 1-P.C. Steam Engine 1-Kromhout oil engine			
AUXILIARY ...									
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 Effective Area per Pole Sq. Ins.	No.	Diameter.	In Circuit.	Rule.			
MAIN GENERATOR ...	1	.14780	37	.072	145	152	30	V.I.R.	L.C. & A.
EQUALISER CONNECTIONS ...									
AUXILIARY GENERATOR...									
EMERGENCY GENERATOR...									
ROTARY TRANSFORMER { MOTOR GENERATOR...									
ENGINE ROOM... }	1	.06	19	.064	70	83	30	do	do
BOILER ROOM... }									
AUXILIARY SWITCHBOARDS ...									
Shore supply	1	.1009	19	.083	100	118	150	do	do
Midship & Fore	1	.06	19	.064	38	83	560	do	do
Navigation	1	.01046	7	.044	5	31	600	do	do
ACCOMMODATION	1	.02214	7	.064	33	46	120	do	do
Cargo Cluster	1	.00701	7	.036	13	24	120	do	do
WIRELESS ...	1	.02214	7	.064	15	46	230	do	do
SEARCHLIGHT ...	1	.00194	3	.029	13	7.8	400	do	do
MASTHEAD LIGHT ...	1	.00194	3	.029	13	7.8	90	do	L.C. & A.
SIDE LIGHTS ...	1	.00194	3	.029	1	7.8	80	do	L.C.
COMPASS LIGHTS ...	1	.00194	3	.029	13	7.8	740	do	L.C. & A.
CARGO LIGHTS ...	1	.00194	3	.029	2.1	7.8	60	do	L.C.
ARC LAMPS ...									
HEATERS ...									

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 Effective 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...	2	1	.1009	19	.063	96	118	80	V.I.R.	L.C. & A.
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 ...										
Oil Purifier motor	1	1	.01046	7	.044	28	31	180	do	do
Drill do	1	1	.00453	7	.029	17	18.2	65	do	do
Laths do	1	1	.00453	7	.029	12	18.2	72	do	do
Grinder do	1	1	.01046	7	.044	26	31	110	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.

FOR  
SWAN. HUNTER. & WIGHAM RICHARDSON. LTD

Electrical Engineers.

Date

4<sup>th</sup> Dec 1931

#### COMPASSES.

Distance between electric generators or motors and standard compass 215 feet Approx.

Distance between electric generators or motors and steering compass 212 do do.

The nearest cables to the compasses are as follows:—

A cable carrying 1 Ampères inside feet from standard compass 7 feet from steering compass.

A cable carrying 1 Ampères 7 feet from standard compass inside feet from steering compass.

A cable carrying 2 Ampères 6 feet from standard compass 8 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 any course in the case of the standard compass, and nil degrees on any course in the case of the steering compass.

G. A. Hunter Builder's Signature.

Date

4<sup>th</sup> Dec 1931

Is this installation a duplicate of a previous case Yes If so, state name of vessel M.V. CARDITA.

General Remarks (State quality of workmanship, opinions as to class, &c.) This installation has been fitted

on board under special survey and has been tested under full working conditions and found satisfactory.

The materials and workmanship were found to be good and sound.

It is submitted that

See light

22/12/31

Total Capacity of Generators 32 Kilowatts.

The amount of Fee ... £ 23 : - : When applied for, 5/12/31

Travelling Expenses (if any) £ : : When received, 23/12/31

R. C. Clayton.

Surveyor to Lloyd's Register of Shipping.

Committee's Minute TUE. 22 DEC 1931

Assigned See light (See F. C. Rpt.)



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