

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

7 JAN '37

Received at London Office

Date of writing Report 18-12-1936 When handed in at Local Office 6.1.37 Port of Glasgow.

No. in Survey held at Glasgow & Greenock Date, First Survey 28.10.36 Last Survey 28-12-1936
Reg. Book.

90185 on the M.V. "SAN CASIMIRO"

(Number of Visits 8)

Tons { Gross 8046
Net 4731.

Built at Glasgow By whom built Rhythwood S.B. Co. Ltd Yard No. 43 When built 1936

Owners Eagle Oil Shipping Co. Ltd Port belonging to London.

Electric Light Installation fitted by Clarke Chapman & Co. Ltd Contract No. 43 When fitted 1936

Is the Vessel fitted for carrying Petroleum in bulk Yes.

System of Distribution

Two wire ✓

Pressure of supply for Lighting

110 ✓

volts, Heating

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 —

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 main Engine Room. ✓

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

In Engine Room near generators ✓

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

Sindanyo ✓

is the non-hygroscopic insulating material of an approved

type

Yes ✓

Yes ✓

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

accessibility of all parts

Yes ✓

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. switch & fuses for each generator and 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 ✓

voltage

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

Earth Lamps ✓

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 *Yes* /

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

Cables: Single, twin, concentric, or multicore *Single & twin* 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 *2.8 Volts* / 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 *—*, 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 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 *Main: L.C.A.B. runs under fore & aft gangway. Machinery spaces L.C.A.B. Accommodation L.C. clipped.* /

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* /

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 *Armouring lead covering of cables bonded searched.* /

—, 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 *Pump Rooms —* special gastight fittings *—* / how are the cables led in gastight tubing *—* /

where are the controlling switches situated *in accommodation* /

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 *—* are air heaters constructed and fitted as per Rule *—*

Searchlight Lamps, No. of *—* whether fixed or portable *—* are their fittings as per Rule *—*

Are 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* / when possible, 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 *Yes* /

—, 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* /

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 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 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.	Ampères.	Rvs. per Min.		Fuel Used.	Flash Point of Fuel.	
MAIN	2	16	110	146	390	1 Oil Engine 1 Steam Engine.			
AUXILIARY						(See Installation Cpl 13820.)			
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	1	.15	37	.072	146	152	60	Rubber.	L.C.B.	
EQUALISER CONNECTIONS										
AUXILIARY GENERATOR										
EMERGENCY GENERATOR										
ROTARY TRANSFORMER	MOTOR GENERATOR									
ENGINE ROOM	SECT Box No 3	1	.06	19	.064	74.8	83	30	"	L.C.A.B.
BOILER ROOM										
AUXILIARY SWITCHBOARDS										
MIDSHIP SWITCHBOARD	1	.15	37	.072	98.6	152	585	.	L.C.A.B.	
SHORE CONNECTION	1	.15	37	.072	146	152	192	"	L.C.A.B.	
ACCOMMODATION	MID DB No 12	1	.007	7	.036	20.1	24	72	"	L.C.B.
AFT	SECT Box No 2	1	.04	19	.052	52.8	64	132	"	L.C.A.B.
MID SECT BOX NO 1A	1	.06	19	.064	76.1	83	12	"	" "	
MIDSHIP FORWARD DB 1B	1	.007	7	.036	6.5	24	60	"	L.C.B.	
" DB NO 1C	1	.007	7	.036	11.1	24	24	"	L.C.A.B.	
" DB NO 1D	1	.007	7	.036	15	24	80	"	L.C.B.	
WIRELESS										
SEARCHLIGHT	1	.002	3	.029	36	7.8	500	"	L.C.B.	
MASTHEAD LIGHT	1	.002	3	.029	36	7.8	80	"	L.C.B.	
SIDE LIGHTS	1	.002	3	.029	18	7.8	40	"	L.C.B.	
COMPASS LIGHTS	1	.007	7	.036	7.5	24	102	"	L.C.B.	
NAVIGATION POOL LIGHTS	DB No 1A	1	.007	7	.036	19.6	24	105	"	L.C.B.
MIDSHIP DB NO 1E	1	.0225	7	.064	19.1	46	450	"	L.C.A.B.	
MIDSHIP DB NO 1F	1	.0225	7	.064	19.1	46	450	"	L.C.A.B.	
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 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	1	1	.075	19	.072	78	97	90	Rubber	L.C.A.B.
ENGINE REVERSING GEAR										
LUBRICATING OIL PUMPS										
OIL FUEL TRANSFER PUMP										
WINDLASS										
WINCHES, FORWARD										
WINCHES, AFT										
STEERING GEAR—										
(a) MOTOR GENERATOR										
(b) MAIN MOTOR										
WORKSHOP MOTORS	5 B.	1	.04	19	.052	56	64	198	"	L.C.A.B.
VENTILATING FANS										
FUEL SERVICE PUMP	1	1	.007	7	.036	17	24	60	"	" "
OIL PURIFIER	1	1	.007	7	.036	19	24	60	"	" "

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.

For Clarke, Chapman & Co., Ltd.

M^{rs}. Taylor Director

Electrical Engineers.

Date 30.12.36

COMPASSES.

Distance between electric generators or motors and standard compass

200 ft.

Distance between electric generators or motors and steering compass

190 ft

The nearest cables to the compasses are as follows:—

A cable carrying 36 Amperes 60 ft. from standard compass 60 ft. from steering compass.

A cable carrying 7.5 Amperes 12 feet from standard compass 8 feet from steering compass.

A cable carrying Amperes 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 1/2 degree on any course in the case of the standard compass, and 1/2 degree on any course in the case of the steering compass.

BLYTHWOOD SHIPBUILDING CO. LTD.

John W Stewart

Secretary Builder's Signature.

Date 6. Jan 1937

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 electrical equipment of this vessel has been fitted on board under special survey, tested under full working conditions and found satisfactory. The materials and workmanship are good.

6/1/37

Noted

Yam

11.1.37

Total Capacity of Generators 32. Kilowatts.

The amount of Fee ... £ 23 : 0 : 0 15/12/36

Travelling Expenses (if any) £ : : 18/12/36

L. Haffner
Surveyor to Lloyd's Register of Shipping.

Committee's Minute GLASGOW 6 JAN 1937

Assigned SEE ACCOMPANYING MACHINERY REPORT.



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