

# REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

OCT 26 1938

Date of writing Report 12.10.38 When handed in at Local Office 24.10.38 Port of Glasgow  
 No. in Survey held at Port Glasgow Date, First Survey 9.9.38 Last Survey 19.10.38  
 Reg. Book. 87763 on the M.V. "DOSINIA".  
 Built at Port Glasgow. By whom built Lithgows Ltd. Yard No. 910 When built 1938  
 Owners Anglo Saxon Petroleum Co Ltd. Port belonging to London  
 Electric Light Installation fitted by Sunderland Forge & Eng. Co. Ltd. Contract No. 910 When fitted 1938  
 Is the Vessel fitted for carrying Petroleum in bulk Yes.

## System of Distribution

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 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 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

yes

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 micaite 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

yes

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

yes

yes

yes

yes

yes

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

each generator controlled by D.P. switch and fuses; each outgoing circuit controlled by D.P.C.O. switch and fuses.

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

yes

Instruments on main switchboard

two

ammeters

two

volumeters

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

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current protection devices been tested under working conditions

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 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

4.5 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

yes

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, lavatories, 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. in galvanised conduit, wiring in machinery spaces L.C.A. L.C.A.B. clipped, wiring in 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

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 *lead and arming efficiently earthed by means of clips or bonding glands.*

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

W.T. fittings in

gas-tight recess in pump rooms

in gas-tight tubing outside pump room

where are the controlling switches situated

in midship 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 *wiring only*, 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

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

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 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	2	16	110	146	390	steam engine	oil	above 150°F
AUXILIARY						I.C. engine.		
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.	In Circuit.	Rule.			
MAIN GENERATOR	1	1	19	0.83	146	172	50	V.C.	L.C.A.
EQUALISER CONNECTIONS									
AUXILIARY GENERATOR									
EMERGENCY GENERATOR									
ROTARY TRANSFORMER MOTOR									
ENGINE ROOM D.B.	1	0.06	19	0.064	51.8	83	112	Rubber	L.C.A.
BOILER ROOM									
AUXILIARY SWITCHBOARDS									
SHAKE CONNECTION	1	1	19	0.83	146	172	160	V.C.	L.C.A.
CARGO	1	0.06	19	0.064	24	83	160	RUBBER	L.C.A.
NAVIGATION	1	0.01	4	0.044	10	31	674	"	L.C.A.
ACCOMMODATION									
MIDSHIP FOR'D.	1	0.06	19	0.064	60	83	580	"	L.C.A.
AFT.	1	0.06	19	0.064	51	83	160	"	L.C.A.
WIRELESS	1	0.225	7	0.064	33	47	688	"	L.C.A.
SEARCHLIGHT	1	0.06	19	0.064	80	83	1128	"	L.C.A.
MASTHEAD LIGHT	1	0.015	1	0.044	36	6.1	410	"	"
SIDE LIGHTS	1	0.015	1	0.044	36	6.1	85	"	L.C.
COMPASS LIGHTS	1	0.015	1	0.044	2	6.1	50	"	L.C.
POOP LIGHTS									
CARGO LIGHTS									
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	1	1	0.045	7	0.29	14	18.2	156	RUBBER	L.C.A. CONDUIT
GRIND. MACHINE	1	1	0.01	7	0.44	24.5	31	252	"	L.C.A.B.
DRILLING MACHINE	1	1	0.045	7	0.29	17.7	18.2	260	"	L.C.A.B.
LATHE	1	1	0.045	7	0.29	13.8	18.2	250	"	L.C.A.
OIL PURIFIER	1	1	0.01	7	0.44	19	31	116	"	L.C.A.B.
PRIMING PUMP	1	1	0.045	7	0.29	16.25	18.2	168	"	L.C.A.B.
TURNING GEAR	1	1	0.06	19	0.64	83	83	134	"	L.C.A.



Lloyd's Register  
FW382 0076



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.

P. pro.

THE SUNDERLAND FORGE & ENGINEERING CO. LTD.

Electrical Engineers.

Date 12th October 1938.

*J. C. Shanks.*

#### COMPASSES.

Distance between electric generators or motors and standard compass

230 feet.

Distance between electric generators or motors and steering compass

220 feet.

The nearest cables to the compasses are as follows:—

A cable carrying 02 Ampères led into feet from standard compass led into feet from steering compass.

A cable carrying 10 Ampères 16 feet from standard compass 10 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 any course in the case of the standard

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

LITHGOWS LIMITED.

*John W. Fullerton* Secretary

Builder's Signature.

Date

19/10/38

Is this installation a duplicate of a previous case yes. If so, state name of vessel M.V. "DORCASIA"

General Remarks (State quality of workmanship, opinions as to class, etc.) The electrical equipment of this

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

*Noted*  
*27/10/38.*

*Ans*  
*24/10/38*

Total Capacity of Generators 32. Kilowatts.

The amount of Fee ... £ 23 : - : When applied for, at 10/6.

Travelling Expenses (if any) £

12/6 : When received, 28. 10. 19 38 1/10

*R. I. Lurchison* Surveyor to Lloyd's Register of Shipping.

Committee's Minute GLASGOW 25 OCT 1938

Assigned SEE ACCOMPANYING MACHINERY REPORT



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