

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office

JUL 15 1938

Date of writing Report 5. 7. 38 When handed in at Local Office 11. 7. 38 Port of Glasgow.
 No. in Survey held at Glasgow Date, First Survey 29. 4. 38 Last Survey 7. 7. 1938
 Reg. Book. 37890 on the M.V. "DONAX" (Number of Visits 6)
 Tons { Gross 8036
 Net 4760
 Built at Glasgow By whom built Harland & Wolff Ltd. Yard No. 10089 When built 1938
 Owners Anglo-Saxon Petroleum Co. Ltd. Port belonging to London
 Electric Light Installation fitted by Harland & Wolff Ltd. Contract No. 10089 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. Bottom platform, 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 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 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, 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

conduits 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 of 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

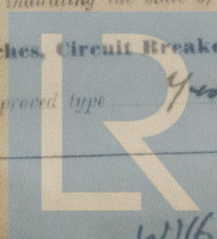
fire-resisting material or lined with approved material Yes Instruments on main switchboard 2 ammeters 2

voltage meters — 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, 2020

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

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-Volt* 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 *Yes*

any point of the installation under maximum load *4-3 Volts*

area of 0.04 square inch and above provided with soldering sockets *Yes*

Paper Insulated and Varnished Cambric Insulated Cables, is the dielectric at the exposed ends of the conductor protected from moisture by being suitably sealed with insulating compound *Yes*, 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, 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 cables - L.C.A. run in gals. conduits on fore & aft gangway, Machinery L.C.A. clipped to steel bays or steelwork of vessel. Accommodation L.C. clipped.*

If cables are run in wood casings, are the casings and caps secured by screws *Yes*, are the cap screws of brass *Yes*, are the cables run in separate grooves *Yes*

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 *None*

Joints in Cables, state if any, and how made, insulated, and protected *Lead*

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 covering & armoring of cables bonded & earthed*

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 *Yes*

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*

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 *Top of Pump Rooms, protected by special gastight fittings. in gastight hatching outside spaces*

where are the controlling switches situated *in accommodation midships*

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 *Yes*

Searchlight Lamps, No. of *Working only for one*, whether fixed or portable *Yes*

are their fittings as per Rule *Yes*

Are Lamps, other than searchlight lamps, No. of *Yes*

are their live parts insulated from the frame or case *Yes*

are their fittings as per Rule *Yes*

Motors, are their working parts readily accessible *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 where 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 *Yes*

have machines of over 100 BHP been inspected by the Surveyors during manufacture and testing *Yes*

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*

are all fuses of the fitted 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			Revs. per Min.	DRIVEN BY	WHERE DRIVEN BY AN INTERNAL COMBUSTION ENGINE.			
		Kilowatts.	Volts.	Amperes.			Fuel Used.	Flash Point of Fuel.		
MAIN	2	16	110	145	390	One by Steam Engine One by Oil Engine	Diesel Oil	Above 150° F.		
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 Nominal Area per Pole Sq. Ins.	No.	Diameter.	Circuit.	Rule.				
MAIN GENERATOR	1	16	37	.072	145	152	80	Rubber	L.C.A.	
EQUALISER CONNECTIONS										
AUXILIARY GENERATOR										
EMERGENCY GENERATOR										
ROTARY TRANSFORMER										
MOTOR GENERATOR	1	.04	19	.052	54	64	78	"	"	
ENGINE ROOM	1	.04	19	.052	54	64	78	"	"	
BOILER ROOM										
AUXILIARY SWITCHBOARDS										
ACCOMMODATION										
AFT. SECT. Box No. 3	1	.04	19	.052	55	64	106	"	"	
MIDSHIP FORECASTLE SECT. Box No. 6	1	.10	19	.083	74	118	530	"	"	
PORTABLE CANNON. SECT. Box No. 2	1	.04	19	.052	24	64	120	"	"	
NAVIGATION	1	.0045	7	.029	118	18.2	620	"	"	
WIRELESS	1	.0145	7	.052	14	37	660	"	"	
SEARCHLIGHT	1	.04	19	.052	40	64	1380	"	"	
MASTHEAD LIGHT	1	.002	3	.029	36	7.8	438	"	"	
SIDE LIGHTS	1	.002	3	.029	36	7.8	80	"	L. C.	
COMPASS LIGHTS	1	.002	3	.029	18	7.8	20	"	"	
POOP LIGHTS										
CARGO LIGHTS										
ARC LAMPS										
HEATERS	1	.10	19	.083	-	118	172	"	L. C.A.	
SHORE CONNECTION										
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	1	1	.06	19	.064	80	83	112	Rubber	L. C. A.
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 S.D.A.M.L.	-	1	.06	19	.064	77	83	250	"	"
VENTILATING FANS										
LATHE	1	1	.0045	7	.029	13.8	18.2	60	"	"
DRILLING M/c.	1	1	.0045	7	.029	17.7	18.2	90	"	"
GRINDER	1	1	.01	7	.044	24.5	31	98	"	"
FUEL OIL PUMP	1	1	.0045	7	.029	16.1	18.2	160	"	"
OIL PURIFIER	1	1	.01	7	.044	21.3	31	156	"	"

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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 HARLAND AND WOLFF, LIMITED

Agreen
Govan Secretary

Electrical Engineers.

Date 7-7-38

COMPASSES.

Distance between electric generators or motors and standard compass

approx. 248 ft.
" 254 ft.

Distance between electric generators or motors and steering compass

The nearest cables to the compasses are as follows:—

A cable carrying	8	Ampères	8	feet from standard compass	12	feet from steering compass.
A cable carrying	3.6	Ampères	12	feet from standard compass	5	feet from steering compass.
A cable carrying	16.6	Ampères	10	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 *all the* course in the case of the standard compass, and *Nil* degrees on *all the* course in the case of the steering compass.

For HARLAND AND WOLFF, LIMITED

Agreen
Govan Secretary

Builder's Signature.

Date 7-7-38

Is this installation a duplicate of a previous case *Yes* If so, state name of vessel *MV. "SITALA"*

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 & sound.*

W. H. H. H.
19/7/38.

11-7-38 Total Capacity of Generators *32.* Kilowatts.

The amount of Fee ... £ *23:-*

When applied for,

19

Travelling Expenses (if any) £

When received,

2/8 1938

WED 4 AUG 1938

Committee's Minute

Assigned

See fls. 76 59977

W. H. H. H. *H. P. van der Wijk.*
Surveyors to Lloyd's Register of Shipping.



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