

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office

Date of writing Report 16 Oct 42 When handed in at Local Office 16 Oct 42 Port of Philadelphia
 No. in Survey held at Chester Pa Date, First Survey 16 July Last Survey 30 Sept 1942
 Reg. Book. on the S/S GULF MARACAIBO Tons { Gross 9306
 Net
 Built at Chester By whom built Sum S B & D D Co Yard No. 233 When built 1942
 Owners Gulf Oil Co Port belonging to Philadelphia
 Electric Light Installation fitted by Sum S B & D D Co Contract No. 233 When fitted 1942
 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

220

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

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

Yes

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

Yes

, is an adjustable regulating resistance fitted in

series with each shunt field

Have certificates of test results for machines under 100 kw. been submitted and

approved

Have machines over 100 kw. been inspected by the Surveyors during manufacture and testing

Yes

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

Machinery flat stb side, upper engine room.

, 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

Yes

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

Main Switch Boards, where placed

Machinery flat stb side upper engine room

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

Same compartment

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

YesYes

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

accessibility of all parts

YesYes

, absence of fuses on back of board

YesYes

, temperature rise of

omnibus bars

Yes

, individual fuses to voltmeter, pilot or earth lamp

YesYes

, are moving parts of switches alive in the

"off" position

Yes

are all screws and nuts securing connections effectively locked

YesYes

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

2. 250 KW gen. 1600 AMP 3 P ST KNIFE SWITCH 1-1200 AMP 2 P CIRCUIT BREAKER
 1. 40 " " 400 " 2 P ST " " " " " " " "

Are turbine driven generators fitted with emergency trip switch as per rule

Yes

Are cupboards or compartments containing switchboards composed of

fire-resisting material or lined with approved material

Instruments on main switchboard

5

ammeters

4

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

Ground 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 *All* 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 *3%*

any point of the installation under maximum load *Yes*

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

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*, or waterproof insulating tape *Yes*

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 *Lead covered*

Support and Protection of Cables, state how the cables are supported and protected *Supported on flat iron hangers*

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 *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 *None*

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 *None*

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 *None*

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 *No*

are any fittings placed in spaces where inflammable or explosive dust or gases are liable to be present, if so, how are they protected *No*

how are the cables led *No*

where are the controlling switches situated *No*

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 *3*, whether fixed or portable *fixed*, are their fittings as per Rule *Yes*

Arc Lamps, other than searchlight lamps, No. of *0*, 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 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 *Yes* and *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*

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.	Amperes.	Revs. per Min.		Fuel Used.	Flash Point of Fuel.	
MAIN ...	2	200	240	1040	1200	Steam Turbine			
AUXILIARY ...	1	40	"	167	"	Diesel	Diesel oil		
EMERGENCY ...									
ROTARY MOTOR TRANSFORMER GENERATOR	2	25	120	208	1750	Motor			

GENERATOR, LIGHTING AND HEATING CONDUCTORS.										
DESCRIPTION.	No. of Poles.	CONDUCTORS.		COMPOSITION OF STRAND.		TOTAL MAXIMUM CURRENT. AMPERES.		Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED.
		Total Nominal Area per Pole Sq. Ins.	No.	Diameter.	Circuit.	Rule.				
MAIN GENERATOR ...	2	2	1.170	61	.128	1040	1476	50	VC	Lead 9 armoured
EQUALISER CONNECTIONS ...		1	.785	61	.128	-	738	50	"	"
AUXILIARY GENERATOR ...	1	1	.197	37	.082	210	296	70	"	"
EMERGENCY GENERATOR ...										
ROTARY MOTOR TRANSFORMER GENERATOR ...	1	1	.166	19	.106	147	246	80	VC	"
ENGINE ROOM ...	1	1	.236	37	.09	260	343	80	"	"
BOILER ROOM ...	1	1	.041	7	.086	67	104	40	"	"
AUXILIARY SWITCHBOARDS ...										
EATHOMETER ...	1	1	.020	7	.061	10	75	500	VC	"
GYRO. COMPASS ...	1	1	.013	7	.049	14	57	500	"	"
SHORE LINE ...	1	1	.166	19	.106	-	246	200	"	"
RUDDER INDICATOR ...	1	1	.003	7	.024	2	129	200	VC	"
MACHINE SHOP POWER ...	1	1	.041	7	.086	54	104	160	VC	"
ACCOMMODATION ...										
MIDSHIP LTG ...	1	1	.166	19	.106	120	246	440	VC	"
UPPER DEK LTG ...	1	1	.052	7	.097	76	135	120	"	"
POOP " ...	1	1	.041	7	.086	71	104	160	"	"
RUNNING LTG ...	1	1	.008	7	.039	3	28	520	"	"
WIRELESS ...	1	1	.02	7	.061	10	75	460	"	"
SEARCHLIGHT ...										
MASTHEAD LIGHT ...										
SIDE LIGHTS ...										
COMPASS LIGHTS ...										
POOP LIGHTS ...										
CARGO LIGHTS ...										
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 Nominal Area per Pole Sq. Ins.	No.	Diameter.	In Circuit.	Rule.			
Aux. COND. PUMP ...	1	1	.041	7	.086	58	104	60	VC	Lead 9 armoured
Ballast Pump ...	1	1	.066	19	.066	76	135	40	"	"
Aux. COND. CIRC. PUMPS ...	1	1	.020	7	.061	32	75	120	"	"
GENERAL SERVICE PUMP ...	1	1	.392	37	.116	360	464	120	"	"
EMERGENCY BILGE PUMP ...	1	1	.008	7	.039	20	28	100	"	"
SANITARY PUMP ...	1	1	.008	7	.039	12.6	28	120	"	"
ATMOS. DRAIN ...	1	1	.008	7	.039	12.6	28	120	"	"
SHORE LINE ...	1	1	.392	37	.116	464	200	"	"	"
CARGO FRESH WATER PUMPS ...	1	1	.008	7	.039	20	28	160	"	"
AIR COMPRESSOR ...	1	1	.003	7	.024	3.5	129	200	VC	"
REFRIG. COND. CIRC. PUMP ...	1	1	.020	7	.061	39	75	50	VC	"
FRESH WATER PUMP ...	1	1	.008	7	.039	12.6	28	180	"	"
ENGINE TURNING GEAR ...	1	1	.041	7	.086	58	104	160	"	"
VORTEX DUST CATCHER ...	1	1	.003	7	.024	3.5	129	200	VC	"
ENGINE REVERSING GEAR ...	1	1	.003	7	.024	3.5	129	200	VC	"
LUBRICATING OIL PUMPS ...	2	1	.041	7	.086	58	104	160	"	"
SEPARATOR ...	1	1	.003	7	.024	2.4	129	80	VC	"
OIL FUEL TRANSFER PUMP ...	1	1	.003	7	.024	2.4	129	120	"	"
PORTABLE WATER PUMP ...	1	1	.003	7	.024	2.4	129	80	"	"
WINDLASS ...	1	1	.003	7	.024	4.6	129	80	"	"
WASH WATER PUMP ...	1	1	.008	7	.039	8.6	28	140	VC	"
L.O. PURIFIER ...	2	1	.003	7	.024	6.6	129	120	VC	"
VENT. FAN'S ROPS ...	2	1	.003	7	.024	4.6	129	120	"	"
VENT. FAN'S ENG. ROOM ...	2	1	.003	7	.024	4.6	129	120	"	"
TOILET SPACE ...	1	1	.003	7	.024	1.6	129	200	"	"
STEERING GEAR ...	1	1	.003	7	.024	1.6	129	200	"	"
(a) MOTOR GENERATOR ...	2	1	.132	19	.094	112	246	220	VC	"
(b) MAIN MOTOR ...	1	1	.003	7	.024	1.6	129	15	VC	"
BENCH LATHE ...	1	1	.003	7	.024	1.6	129	15	VC	"
WORKSHOP MOTOR ...	1	1	.008	7	.039	3.5	28	600	VC	"
CARGO PUMP ROOM ...	1	1	.008	7	.039	12.6	28	60	"	"
VENTILATING FAN ...	2	1	.314	37	.110	283	385	100	"	"
FORCED DRAFT ...	2	1	.020	7	.061	30	75	160	"	"
F.O. SERVICE ...	2	1	.008	7	.039	20	28	200	"	"
REFRIG. COMPRESSOR ...	2	1	.041	7	.086	58	104	160	"	"
MAIN COND. PUMP ...	2	1	.041	7	.086	58	104	160	"	"
LATHE ...	1	1	.008	7	.039	20	28	60	"	"
SHAPER ...	1	1	.008	7	.039	12.6	28	60	"	"
GRINDER ...	1	1	.008	7	.039	12.6	28	60	"	"
DRILL PRESS ...	1	1	.003	7	.024	4.6	129	90	VC	"

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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.

D M Jackson
per BW

Electrical Engineers.

Date *10/13/42*

COMPASSES.

Distance between electric generators or motors and standard compass

12'

Distance between electric generators or motors and steering compass

The nearest cables to the compasses are as follows:—

A cable carrying *.1* Ampères *6* feet from standard compass — feet from steering compass.

A cable carrying *.3* Ampères *8* feet from standard compass — feet from steering compass.

A cable carrying *.5* Ampères *10* 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 *0* degrees on *any* course in the case of the standard compass, and *0* degrees on *any* course in the case of the steering compass.

D M Jackson
per BW

Builder's Signature.

Date *10/13/42*

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.)

This installation has been constructed

under Specie Survey & in accordance with the approved plans, the workmanship and materials are good. The installation has been tried out under working conditions & found satisfactory. Please find attached letter received from the Westinghouse E.M. Co. covering shop test on motors used for essential services at sea. It will also be noted that the installation does not in every respect meet the Society's Requirements, it does however meet the requirements of the the American Government. As the over load & over speed tests have all proven satisfactory, it is respectfully submitted that this installation be accepted by the Committee.

Total Capacity of Generators *540* Kilowatts.

The amount of Fee ...

\$ 229.50

Travelling Expenses (if any)

\$ 4.00

When applied for,

12 Dec 1942

When received.

19

M R Ham

Surveyor to Lloyd's Register of Shipping.

Committee's Minute

NEW YORK DEC 16 1942

Assigned

Elec. light.



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Lloyd's Register
Foundation