

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office

Date of writing Report 15th Sept. 1947. When handed in at Local Office

19

Port of

London

No. in Survey held at

London

Date, First Survey

Last Survey

19

Reg. Book.

(Number of Visits.....)

on the

M.V. "PACUARE"

En: EMPIRE ALDE.

Tons

Gross

Net

Built at

By whom built

Yard No.

When built

Owners

Port belonging to

Electric Light Installation fitted by

Contract No.

When fitted

Is the Vessel fitted for carrying Petroleum in bulk

No.

System of Distribution

Pressure of supply for Lighting

volts, Heating

volts, Power

volts.

Direct or Alternating Current, Lighting

Power

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, are they compound wound

are they over compounded 5 per cent., if not compound wound state distance between each generator

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

Are all terminals accessible, clearly marked, and furnished with sockets, are they so spaced or shielded that they cannot be accidentally earthed, short circuited, or touched

Are the lubricating arrangements of the generators as per Rule

is the ventilation

Position of Generators

in way of the generators satisfactory, are they clear of all inflammable material, 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, are their axes of rotation fore and aft

Earthing, are the bedplates and frames of the generating plant efficiently earthed, are the prime movers and their respective generators

in metallic contact

Main Switch Boards, where placed

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, are they protected from mechanical injury and damage from water, steam or oil, 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, is all insulation of high dielectric strength and of permanently high insulation resistance

is it of an approved type, 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, is the non-hygroscopic insulating material of an approved

type, and is the frame effectively earthed. Are the fittings as per Rule regarding:— spacing or shielding of live parts

accessibility of all parts, absence of fuses on back of board, temperature rise of

omnibus bars, individual fuses to voltmeter, pilot or earth lamp, are moving parts of switches alive in the

"off" position, are all screws and nuts securing connections effectively locked, are any fuses fitted on the live side of

switches

Main Switchgear, description of switchgear for each generator and each outgoing circuit, and arrangement of equalizer switches

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

ammeters

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

Switches, Circuit Breakers and Fusible Cut-outs,

do these comply with the requirements of the Rules, are the fusible cutouts of an approved type, 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

Cables: Single, twin, concentric, or multicore are the cables insulated and protected as per Tables IV, V, X or XI of the Rules

If the cables are insulated otherwise than as per Rule, are they of an approved type

any point of the installation under maximum load

area of 0.04 square inch and above provided with soldering sockets

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

insulating compound, or waterproof insulating tape

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

Are cables in machinery spaces, galleys, lavatories, bathrooms and lavatories lead covered or run in conduit

Support and Protection of Cables, state how the cables are supported and protected

Lead covered and steel wire braided cables clipped on metal tray supported from bulkhead by steel lugs and cable clips to bulkhead as required

If cables are run in wood casings, are the casings and clips 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

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

Watertight Glands and Deck Tubes, are all cables passing through decks and watertight bulkheads provided with deck tubes or watertight glands

Bushes in Beams and Non-watertight Partitions, where unarmoured cables pass through beams and non-watertight partitions, are the holes efficiently bushed

state the material of which the bushes are made

Earthing Connections, state what earthing connections are fitted and their respective sectional areas

are their connections made as per Rule

Emergency Supply, state

Alternative Lighting, are the groups of lights in the propelling machinery space arranged as per Rule

position and method of control of the emergency supply and how the generator is driven

Navigation Lamps, are these separately wired

are the switches and fuses grouped in a position accessible only to the officers on watch

has each navigation lamp an automatic indicator as per Rule

Fittings, are all fittings on weather decks, in stokeholds and engine rooms and wherever exposed to drip or condensed moisture, watertight

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

how are the cables led

where are the controlling switches situated

are all fittings suitably ventilated

are all switches and lampholders constructed wholly of non-ignitable, non-absorbent materials

are air heaters constructed and fitted as per Rule

Heating and Cooking Appliances, are they constructed and fitted as per Rule

Searchlight Lamps, No. of

Arc Lamps, other than searchlight lamps, No. of

Motors, are their working parts readily accessible

are the brushes, brush holders, terminals and lubricating arrangements as per Rule

inflammable gases cannot accumulate and clear of all inflammable material

whether, steam or oil

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

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

field and motor speed regulators, starters and controllers constructed and fitted as per Rule

are required, are these fitted as per Rule

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

are all fuses of the fitted cartridge type

If portable lamps for use in dangerous spaces are supplied, are they of a self-contained, battery-fed type approved by the Home Office

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.	H.P. per Min.		Fuel Used.	Flash Point of Fuel.
MAIN	3	130	230	566	475	Diesel motor	Diesel oil	above 150° F.
AUXILIARY	1	65	230	283	500	"	"	"
EMERGENCY								
SHORE SUPPLY								
ROTARY TRANSFORMER	1	4.65	110	42				

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.	Circuit.	Rule.			
MAIN GENERATOR	2	185	-	-	566	470		Rubber	Lead covered and steel wire braided
EQUALISER CONNECTIONS	1	185	-	-	-	235		"	"
AUXILIARY GENERATOR	1	185	-	-	283	235		"	"
EMERGENCY GENERATOR									
SHORE SUPPLY MOTOR	1	25	-	-	34	63	33	"	"
ROTARY TRANSFORMER	1	16	-	-	42	49	83	"	"
SECTION BOARDS	1	35	-	-	90	78	116	"	"
ENGINE ROOM	1	35	-	-	90	78	165	"	"
REFRIG. ROOM	1	25	-	-	62	63	49	"	"
AUXILIARY SWITCHBOARDS	1	25	-	-	60	205	99	"	"
VIII	1	150	-	-	60	205	99	"	"
XI	1	70	-	-	150	125	360	"	"
XI	1	70+25	-	-	128	125	280	"	"
XV	1	150	-	-	200	205	66	"	"
XVI	1	120	-	-	155	175	83	"	"
ACCOMMODATION	1	120	-	-	160	175	116	"	"
SECTION B.D. I, III & IX	1	70	-	-	90	125	280	"	"
IV+V	1	35	-	-	46	63	280	"	"
IV	1	25	-	-	43	78	165	"	"
WIRELESS	1	16	-	-	47	63	165	"	"
SEARCHLIGHT	1	25	-	-	25	49	198	"	"
MAIN LIGHT	1	10	-	-	60	63	116	"	"
SEED LIGHTS	1	25	-	-	20	28	116	"	"
COAST LIGHTS	1	25	-	-	15	63	360	"	"
NAVIGATION LIGHTS	1	25	-	-	10	15.5	33	"	"
SECTION B.D. I, III & IX	1	2.5	-	-	10	15.5	210	"	"
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	1	16	1x25	-	-	60	63	27	Rubber	Lead covered and steel wire braided
MAIN BILGE LINE PUMPS	1	10	1x10	-	-	40	38	23	"	"
GENERAL SERVICE PUMP	1	12	1x16	-	-	48	49	17	"	"
PORT SERVICE PUMP	1	7.5	1x10	-	-	30	38	60	"	"
EMERGENCY BILGE PUMP	1	7.5	1x10	-	-	30	38	60	"	"
SANITARY PUMP	2	25	1x25	-	-	81	63	60	"	"
CIRC. SEA WATER PUMPS	2	16	1x16	-	-	60	49	43	"	"
CIRC. FRESH WATER PUMPS	2	16	1x16	-	-	60	49	43	"	"
AIR COMPRESSOR S.C.O.	2	7.5	1x10	-	-	268	235	116	"	"
FRESH WATER PUMP	1	3	1x2.5	-	-	13	15.5	30	"	"
ENGINE TURNING GEAR	1	10	1x10	-	-	40	38	50	"	"
ENGINE REVERSING GEAR	1	10	1x10	-	-	40	38	27	"	"
LUBRICATING OIL PUMPS	1	10	1x10	-	-	40	38	46	"	"
Sub-oil separator	1	2.5	1x2.5	-	-	11	15.5	27	"	"
OIL FUEL TRANSFER PUMP	1	2.5	1x2.5	-	-	11	15.5	27	"	"
WINDLASS	1	45	1x50	-	-	67	56	26	"	"
WINCHES, FORWARD	4	18	1x16	-	-	92	56	26	"	"
WINCHES, AFT	4	25	1x16	-	-	92	56	26	"	"
STEERING GEAR										
(a) MOTOR GENERATOR	1	5	1x10	-	-	21	38	198	"	"
(b) MAIN MOTOR	1	4	1x4	-	-	17	22.5	50	"	"
WORKSHOP MOTOR	1	4	1x4	-	-	17	22.5	50	"	"
VENTILATING FANS (Cargo)	2	19	1x35	-	-	73	78	26	"	"
"	2	14	1x25	-	-	55	63	33	"	"
REFRIG. COOLING WATER P.	1	8.5	1x10	-	-	34	38	83	"	"
BRINE PUMPS	3	8.5	1x10	-	-	34	38	23	"	"

* Wind direction indicator
o 5 lbs. Rating

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.

Electrical Engineers.

Date

COMPASSES.

Distance between electric generators or motors and standard compass

Distance between electric generators or motors and steering compass

The nearest cables to the compasses are as follows:—

A cable carrying Ampères feet from standard compass feet from steering compass.

A cable carrying Ampères feet from standard compass 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

Has the effect of switching on and off circuits, motors and other electro-magnetic apparatus within the vicinity of the compasses been noted

The maximum deviation due to electric currents was found to be degrees on course in the case of the standard compass, and degrees on course in the case of the steering compass.

Builder's Signature.

Date

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 Installation of this vessel has been fitted in accordance with Germanischer Lloyd Rules. The electrical equipment has been reconditioned and insulation tests brought up to Rule requirements and the installation has been tested under working conditions and found satisfactory. Although the equipment differs in minor respects and some cable sizes are below Rule requirements, the installation is in my opinion such as might be accepted for Classification.

Total Capacity of Generators 455 Kilowatts.

The amount of Fee ...	£	:	:	When applied for,
				19
Travelling Expenses (if any) £	:	:	:	When received,
				19

J. H. Tinkell
Surveyor to Lloyd's Register of Shipping.

Committee's Minute

Assigned

FRL 14 NOV 1947

See minute on
Rpt. 9



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Foundation