

# REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office 10 APR 1942

Date of writing Report. Jan. 23, 1942 When handed in at Local Office. Jan. 23, 1942 Port of RICHMOND, CALIF.

No. in Survey held at RICHMOND, CALIF. Date, First Survey Nov. 17, 1941 Last Survey Jan. 10, 1942  
Reg. Book. (Number of Visits. 49)

on the S.S. "OCEAN VESTAL" Tons { Gross 7174 Net 4272

Built at RICHMOND, CALIF By whom built TODD-CALIFORNIA SHIPBUILDING Yard No. 8 When built 1942  
Owners BRITISH GOVERNMENT DIVISION of THE PERMANENTE METALS CORPORATION LONDON  
Port belonging to

Electrical Installation fitted by TODD-CALIFORNIA SHIPBUILDING DIVISION of Contract No. 8 When fitted 1942  
THE PERMANENTE METALS CORPORATION

Is vessel fitted for carrying Petroleum in bulk. NO Is vessel equipped with D.F. YES E.S.D. YES Gy.C. NO Sub.Sig. NO

Have plans been submitted and approved. YES System of Distribution TWO WIRE D.C. Voltage of supply for Lighting 115

Heating Power 115 DC Direct or Alternating Current, Lighting DC Power DC If Alternating Current state periodicity Prime Movers,

has the governing been tested and found as per Rule when full load is suddenly thrown on and off. YES Are turbine emergency governors fitted with a trip switch as per Rule.

Generators, are they compound wound, are they level compounded under working conditions, if not compound wound state distance between generators and from switchboard.

Where more than one generator is fitted are they arranged to run in parallel. NO, are shunt field regulators provided. YES

Is the compound winding connected to the negative or positive pole POSITIVE

Have machines over 100 kw. been inspected by the Surveyors during manufacture and testing. Have certificates of test for machines under 100 kw. been supplied. YES and the results found as per rule. YES

Are the lubricating arrangements and the construction of the generators as per rule. YES Position of Generators ENGINE ROOM, STARBOARD SIDE, INBOARD AND OUTBOARD

is the ventilation in way of generators satisfactory. YES are they clear of inflammable material. YES, if situated near unprotected combustible material state distance from same horizontally and vertically.

are the generators protected from mechanical injury and damage from water, steam and oil. YES, are the bedplates and frames earthed. YES and the prime movers and generators in metallic contact. YES

Switchboards, where are main switchboards placed ENGINE ROOM, STARBOARD SIDE

are they in accessible positions, free from inflammable gases and acid fumes. YES, are they protected from mechanical injury and damage from water, steam and oil. YES, if situated near unprotected combustible material state distance from same horizontally and vertically.

what insulation material is used for the panels. EBONY ASBESTOS, if of synthetic insulating material is it an Approved Type. YES, if of semi-insulating material (slate or marble) are all conducting parts insulated therefrom as per Rule. YES

Is the frame effectually earthed. YES Is the construction as per Rule. YES, including accessibility of parts. YES, absence of fuses on the back of the board. YES, individual fuses to pilot and earth lamps, voltmeters, etc. YES locking of screws and nuts. YES, labelling of apparatus and fuses. YES, fuses on the "dead" side of switches. YES

Description of Main Switchgear for each generator and arrangement of equaliser switches. 2 POLE FUSED SINGLE THROW KNIFE SWITCHES FOR EACH GENERATOR

and for each outgoing circuit. DOUBLE POLE, DOUBLE THROW, KNIFE SWITCH

Are compartments containing switchboards composed of fire-resisting material or lined as per Rule. YES Instruments on main switchboard. 2 ammeters. 2 voltmeters. 0 synchronising devices.

For compound machines in parallel is the ammeter connected on the pole opposite to the equaliser connection. Earth Testing, state means provided. EARTH LAMPS

Switches, Circuit Breakers and Fuses, are they as per Rule. YES, are the fuses an approved type. YES, are all fuses labelled as per Rule. YES

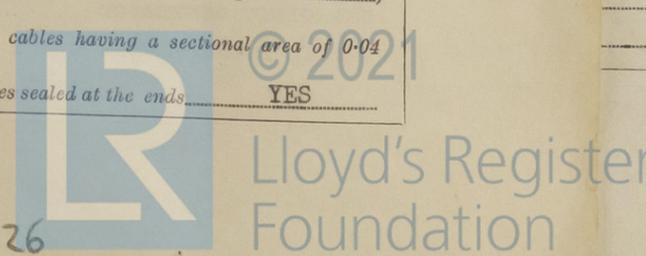
If circuit breakers are provided for the generators, at what overload current did they open when tested. NONE, are the reversed current protection devices connected on the pole opposite to the equaliser connection. have they been tested under working conditions, and at what current did they operate.

Joint Boxes, Section Boards and Distribution Boards, is the construction and position as per Rule. YES

Cables, are they insulated and protected as per the appropriate Tables of the Rules. YES, if otherwise than as per Rule are they of an approved type.

state maximum fall of pressure between bus bars and any point under maximum load. 1.4 volt, are the ends of all cables having a sectional area of 0.04 square inch and above provided with soldering sockets. YES

Are paper insulated and varnished cambric insulated cables sealed at the ends. YES



with insulating compound YES or waterproof insulating tape ---. Are all the cable runs in accessible positions, not exposed to drip or accumulation of water or oil, high temperatures or risk of mechanical damage YES, are cables laid under machines or floorplates NO, if so, are they adequately protected ---. Are cables in machinery spaces, galleys, laundries, etc., lead covered YES or run in conduit ---. State how the cables are supported and protected STEEL HANGERS AND STRAPS, STEEL PADS AND STRAPS, STEEL CASINGS, LEAD AND ARMOUR COVERED.

Are all lead sheaths, armouring and conduits effectually bonded and earthed YES. Refrigerated chambers, are the cables and fittings as per Rule YES. Are all cables passing through decks and watertight bulkheads provided with deck tubes or watertight glands YES, where unarmoured cables pass through beams, etc., are the holes effectively bushed YES and with what material All cables lead and armoured soft iron & lead, or brass. Alternative Lighting, are the groups of lights in the engine and boiler rooms arranged as per Rule YES. Emergency Supply, state position NONE and method of control ---.

Navigation Lamps, are they separately wired YES controlled by separate double pole switches YES and fuses YES. Are the switches and fuses in a position accessible only to the officers on watch YES, is an automatic indicator fitted YES. Secondary Batteries, are they constructed and fitted as per Rule NONE, are they adequately ventilated --- what is the battery capacity in ampere hours ---.

Fittings, are all fittings on weather decks, in stokeholds and engine rooms and wherever exposed to drip or condensed moisture, weatherproof YES. Are fittings installed where readily combustible materials or inflammable or explosive dust or gases are likely to be present NONE, if so, how are they protected ---.

and where are the controlling switches fitted ---, are all fittings suitably ventilated ---.

are all fittings and accessories constructed and installed as per Rule YES. Searchlight Lamps, No. of NONE, whether fixed or portable ---.

are their fittings as per Rule ---. Heating and Cooking, is the general construction as per Rule NONE.

are the frames effectually earthed ---, are heaters in the accommodation of the convection type ---. Motors, are all motors constructed and installed as per Rule YES and placed in well-ventilated compartments in which inflammable gases cannot accumulate and free from damage from water, steam and oil YES, if situated near unprotected combustible material state minimum distance from same horizontally --- and vertically ---. Are motors coupled to oil fuel transfer and unit pressure pumps capable of being stopped from a position accessible in the event of fire in the pump compartment ---.

Have motors of 100 BHP and over been inspected by the Surveyors during manufacture and testing NONE. Have certificates of test for motors under 100 BHP intended for essential services been supplied and the results found as per Rule YES. Control Gear and Resistances, are they constructed and fitted as per Rule YES. Lightning Conductors, where required are they fitted as per Rule NONE. Ships carrying Oil having a Flash Point less than 150° F. Have all the special requirements of the Rules for such ships been complied with ---, are all fuses of the cartridge type ---.

are they of an approved type ---. Are the fittings for pump rooms, 'tween deck spaces, etc., in accordance with the special requirements for such ships ---. Are the cables lead covered as per Rule ---. Spare Gear, if the vessel is for open sea service have spares been provided as per Rule YES, are they suitably stored in dry situations YES. Insulation Tests, has the insulation resistance of all circuits and apparatus been tested and found satisfactory YES.

**PARTICULARS OF GENERATING PLANT.**

DESCRIPTION OF GENERATOR.	No. of	RATED AT				DRIVEN BY	WHERE DRIVEN BY AN INTERNAL COMBUSTION ENGINE.	
		Kilowatts.	Volts.	Ampères.	Revs. per Min.		Fuel Used.	Flash Point of Fuel.
MAIN	2	15 each	115	136	450	Reciprocating steam engines (2)		
EMERGENCY	---							
ROTARY TRANSFORMER	---							

**GENERATOR CABLES.**

DESCRIPTION.	KILOWATTS.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (lead plus return feet).	INSULATED WITH.	HOW PROTECTED.
		No. in Parallel Per Pole.	Sectional Area or No. and Dia. of Strands. Sq. ins. or sq. mm.	In the Circuit.	Rule.			
MAIN GENERATOR	15 each	1	.1318	136	138	40	Rubber	lead and armoured
" " EQUALISER	---							
EMERGENCY GENERATOR	---							
ROTARY TRANSFORMER: MOTOR	---							
" " GENERATOR	---							

**MAIN DISTRIBUTION CABLES.**

DESCRIPTION.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (lead plus return feet).	INSULATED WITH.	HOW PROTECTED.
	No. in Parallel Per Pole.	Sectional Area or No. and Dia. of Strands. Sq. ins. or sq. mm.	In the Circuit.	Rule.			
AUX. SWITCHBOARDS AND SECTION BOARDS ...			AIRE RULE				
Degaussing Switchboard (Engine Room, Stbd. side)	1	.1318	95	138	20	Rubber	Lead & Armoured

**LIGHTING AND HEATING, ETC., CABLES.**

WIRELESS	1	.01297	--	31	200	Rubber	Lead & Armoured
NAVIGATION LIGHTS (4) (Double Filament)	1	.003225	.43	11.5	200	"	"
LIGHTING AND HEATING							
Engine & Fire Rooms L1	1	.0261	25.66	48.5	60	"	"
Crews Quarters Aft L2	1	.05213	17.79	74	250	"	"
Foremast House, Cargo Lts., etc. L3	1	.0329	22.90	56	225	"	"
Officers Quarters L4 (A & B)	1	.0329	25.86	56	160	"	"
Engineers Quarters L5	1	.0329	26.3	56	100	"	"
Mainmast House L6	1	.0329	17.55	56	165	"	"
Navigating Lights, etc. L7	1	.01297	--	31	250	"	"
Emergency W. T. Feeder P 8	1	.01297	--	31	100	"	"
Fathometer Feeder S3	1	.01297	10.0	31	260	"	"
Portable Cargo Lights	1	.0051	5.16	16.5	25	Rubber	

**MOTOR CABLES.**

ALL IMPORTANT MOTORS TO BE ENUMERATED.	No.	B.H.P.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (lead plus return feet).	INSULATED WITH.	HOW PROTECTED.
			No. in Parallel Per Pole.	Sectional Area or No. and Dia. of Strands. Sq. ins. or sq. mm.	In the Circuit.	Rule.			
Domestic Refrigerator Mach.	1	2 hp.	1	.0082	17	23	75	Rubber	Lead & Armoured
Hot Water Pump	1	1/10hp.	1	.003225	2.1	11.5	15	"	"

The Electrical Equipment is installed in accordance with the approved plans and the requirements of the Rules.

All Insulated Conductors are guaranteed to have been tested at the maker's works as specified in the Rules.

The foregoing is a correct description.

*K. Sickenberger* - Chief Marine Electrician Electrical Engineers. Date \_\_\_\_\_

COMPASSES.

Minimum distance between electric generators or motors and standard compass 10 feet

Minimum distance between electric generators or motors and steering compass 6 feet

The nearest cables to the compasses are as follows:—

A cable carrying 2.15 Ampères 11 feet from standard compass 6 feet from steering compass.

A cable carrying .43 Ampères 3 feet from standard compass 3 feet from steering compass.

A cable carrying .43 Ampères 3 feet from standard compass 3 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 3° degrees on South East course in the case of the standard compass, and 3° degrees on North course in the case of the steering compass.

TODD-CALIFORNIA SHIPBUILDING DIVISION Builder's Signature. Date \_\_\_\_\_  
of THE PERMANENTE METALS CORPORATION

Is this installation a duplicate of a previous case YES If so, state name of vessel S. S. "OCEAN VIKING"

Plans. Are approved plans forwarded herewith NO If not, state date of approval May 5th, 1941

Certificates. Are certificates of test for motors engaged on essential services and generators forwarded herewith - - -

General Remarks (State quality of workmanship, whether insulation tests, etc., have been made, opinions as to class, etc.)

The workmanship is good, material and equipment tested in accordance with

rules and found to be satisfactory. The steam driven generators and

appliances are, in our opinion, eligible to be included in the record

of L.M.C. 1/42

*Wid  
fy  
15/4/42*

Total Capacity of Generators 30 Kilowatts.

The amount of Fee £50. Inclusive fee When applied for, 25/3/19 42 in London.  
Travelling Expenses (if any) £ chargeable at London When received, 19.....

*John Melvin James F. Robertson*  
Surveyor to Lloyd's Register of Shipping.

Committee's Minute NEW YORK FEB 11 1942 *J.E.J.*

Assigned *Elec light*

