

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

5 MAY 1947

Received at London Office

Date of writing Report 1st April, 1947 When handed in at Local Office 1st April, 1947 Port of Galveston, Texas
 No. in Survey held at Galveston, Texas Date, First Survey 19th Feb. Last Survey 7th March, 1947
 Reg. Book. 76220 on the S/S "JOHN JACOB ASTOR" Tons { Gross 7176
 Net 4380
 Built at Portland, Ore. By whom built Oregon S. B. Corp. Yard No. When built 1943
 Owners Scindia Steam Navigation Co. Port belonging to Bombay
 Electric Light Installation fitted by Contract No. When fitted
 Is the Vessel fitted for carrying Petroleum in bulk No

System of Distribution Two wire Direct Current
 Pressure of supply for Lighting 110 volts, Heating volts, Power 110 volts,
 Direct or Alternating Current, Lighting Direct 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 Yes
 Generators, do they comply with the requirements regarding temperature rise Yes, are they compound wound Yes
 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 Yes, 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 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 Generator Flat S.S. Engine Room after end, 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 Generator Flat Eng. Room S. S. aft
 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 ,
 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 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
 omnibus bars , 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
Three pole disconnect switches, centre pole equalizer. Two pole carbon break circuit breaker
with overload protection each blade and under voltage reverse current protection.
 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 3 ammeters 3 volt-
 meters 3 synchronizing device for paralleling purposes. For compound machines is the ammeter connected on the opposite pole to equalizer 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

current protection devices been tested under working conditions... **Yes** Joint Boxes, Section and Distribution Boards, is the construction, protection, insulation, material, and position of these as per rule... **Yes** To A.I.E.E. Standards

Cables: Single, twin, ~~coaxial~~, multicore... **Yes** are the cables insulated and protected as per Tables IV, V, X or XI of the Rules... **Yes** Fall of Pressure, state maximum between bus bars and any point of the installation under maximum load... **2.96 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... 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, 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... **Clipped to steel hangers and (or bulkheads) protected by sheet steel covers in holds.**

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 A.I.E.E.

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... **Junction boxes**

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... state the material of which the bushes are made...

Earthing Connections, state what earthing connections are fitted and their respective sectional areas... **Cables efficiently grounded** 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...

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... **Yes** 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... where are the controlling switches situated... 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... **One** whether fixed or portable... **fixed** 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... 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... **Totally enclosed** if not of this type, state distance of the combustible material horizontally or vertically above the motors... have machines of over 100 BPH 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... **A.I.E.E. Lighting 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... are all fuses of the filled cartridge type... are they of an approved 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.	Amperes.	Revs. per Min.		Fuel Used.	Flash Point of Fuel.
MAIN GENERATOR	3	20	120	167	400	Reciprocating steam engine		
AUXILIARY GENERATOR								
EMERGENCY GENERATOR								
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	3	250,000	37	82.2	167	280	50	Varn. Camb. L.C. & armoured		
EQUALISER CONNECTIONS	3	41,700	7	77.2	-	84	50	" "	"	
AUXILIARY GENERATOR										
EMERGENCY GENERATOR			19	83.7	167	280	50	" "	"	
ROTARY TRANSFORMER (MOTOR GENERATOR)										
ENGINE ROOM and MILLER ROOM Lighting (L1)	1	66,400	7	97.4	58.36	83	120	" "	"	
AUXILIARY SWITCHBOARDS										
Wat. dk. accom (L7)	1	106,000	19	83.7	48.42	184	190	" "	"	
Wheelhouse (L8)	1	26,300	7	61.2	12.42	46.5	240	" "	"	
Bridge dk. accom (L9)	1	106,000	19	83.7	48.17	184	200	" "	"	
ACCOMMODATION										
Midship (L3)	1	106,000	19	83.7	56.67	184	190	" "	"	
Midship (L4)	1	106,000	19	83.7	50.22	184	150	" "	"	
Fore deck house (L6)	1	66,400	7	97.4	24.36	83	440	" "	"	
WIRELESS	1	26,300	7	61.2	22.00	46.5	190	" "	"	
ARCHLIGHT (L10)	1	10,400	7	38.5	4.16	25.5	420	" "	"	
ASTHEAD LIGHT	1	4,110	7	94.2	.42	13	440	" "	"	
DE LIGHTS	1	4,110	7	24.2	.42	13	110	" "	"	
COMPASS LIGHTS	1	4,110	7	24.2	1.67	13	-	" "	"	
TOP LIGHTS										
WING LIGHTS Fwd. (L2)	1	66,400	7	97.4	24.63	83	410	" "	"	
WING LIGHTS Aft. (L5)	1	66,400	7	97.4	22.91	83	160	" "	"	
WATERS										

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.			
LAST PUMP										
IN BILGE LINE PUMPS										
GENERAL SERVICE PUMP										
EMERGENCY BILGE PUMP										
ROTARY PUMP										
FOR SEA WATER PUMPS										
FOR FRESH WATER PUMPS										
FOR COMPRESSOR										
FRESH WATER PUMP	2	1	4110	7	24.2	6.22	13	100	Varn. Camb. L.C. & armoured	
ENGINE TURNING GEAR										
ENGINE REVERSING GEAR										
LUBRICATING OIL PUMPS										
FUEL TRANSFER PUMP										
WINDLASS										
WINDLASS, FORWARD										
Refrigerator	1	1	83,700	19	66.4	59.39	134	200	" "	"
WINDLASS, AFT										
TURNING GEAR—										
a) MOTOR GENERATOR										
b) MAIN MOTOR										
WORKSHOP MOTOR										
VENTILATING FANS										

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..... If so, state name of vessel.....

General Remarks (State quality of workmanship, opinions as to class, &c.....)

The electrical installation on board the vessel was fitted to the requirements of the American Bureau of Shipping in 1943 and plans available have been examined and found generally in accordance with the Rules. The materials and workmanship are satisfactory and the installation has been examined under full load, tested as per Rule, and found satisfactory. It is the opinion of the undersigned that the electrical installation is eligible to be classed with this Society.

Total Capacity of Generators..... 60 ✓ Kilowatts.

The amount of Fee £ \$100.00 : { When applied for, 27/3/ 19 47
When received, 19.....
Traveling Expenses (if any) £ : : {

James Lavelley
Surveyor to Lloyd's Register of Shipping.

Committee's Minute..... NEW YORK APR 16 1947 *J.L.*

Assigned *elec light*

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(The Surveyors are requested not to write on or below the space for Committee's Minute)



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