

Rpt. 13.

No. 5932

REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office 14 DEC 1936

Date of writing Report 19th Nov 1936 When handed in at Local Office 19/11/1936 Port of Yokohama.

No. in Survey held at YOKOHAMA Date, First Survey 1st Sept. 1936 Last Survey 5th Nov 1936

Reg. Book.

(Number of Visits 8)

on the Steel Screw M.V. HOYO MARU

Tons { Gross 8692
Net 6042

Built at Yokohama By whom built Mitsubishi Zukogyo Kaishiki

Owners Nippon Tanker Kaishiki Kaisha Port belonging to Tokio

Electric Light Installation fitted by Mitsubishi Zukogyo K.K. Yokohama Dock Contract No. 250 When fitted 1936

Is the Vessel fitted for carrying Petroleum in bulk Yes

System of Distribution Two wire insulated system

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 rating 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

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 Bottom Platform, starboard forward end of 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 ✓ 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 Bottom platform, starboard forward end of 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 ✓

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 ✓, 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 ✓

and is the frame effectively earthed ✓ 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 ✓, proportion of omnibus bars Yes ✓, individual fuses to voltmeter, pilot or earth lamp Yes ✓, connections of switches Yes ✓

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

One air circuit breaker & two fuses. For outgoing circuits, fourteen double pole double throw switches with fuses ✓

Instruments on main switchboard Two ✓ ammeters Two ✓ voltmeters ✓ synchronising device for paralleling purposes.

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 ✓

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 are the cables insulated and protected as per Tables IV, V, XI or XIII of the Rules Yes

Fall of Pressure, state maximum between bus bars and any point of the installation under maximum load 5.2 Volts

Cable Sockets and other connections, are the ends of all cables having a sectional area of 0.04 square inch and above provided with soldering sockets yes

Paper Insulated Cables. If cables are paper covered, is the dielectric at the exposed ends of the conductor protected from moisture by being suitably sealed with insulating compound ✓

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

Support and Protection of Cables, state how the cables are supported and protected Perforated plates & clips and steel tubing

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, if lights are fitted, are the cables and fittings in accordance with the special requirements ✓

Joints in Cables, state if any, and how made, insulated, and protected Cables are jointed with insulated terminals in metal 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 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 ✓

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 ✓

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 Guards.

are any fittings placed in spaces where inflammable or explosive dust or gases are liable to be present, if so, how are they protected gas tight tubes & fittings. how are the cables led through gas tight tubing

where are the controlling switches situated Outside the spaces.

Searchlight Lamps, No. of One, whether fixed or portable fixed, are their fittings as per Rule Yes

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 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 ✓ and ✓

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

If portable lamps for use in dangerous spaces are supplied, are they of a type approved by the Home Office ✓

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 ...	Two	30 each	110	273	600	Steam engines.			
AUXILIARY ...									
EMERGENCY ...									
ROTARY TRANSFORMER									

GENERATOR, LIGHTING AND HEATING CONDUCTORS.									
DESCRIPTION.	CONDUCTORS.		COMPOSITION OF STRAND.		TOTAL MAXIMUM CURRENT. AMPERES.		Approximate Length. (Lead and Return.) Feet. M.	Insulated with	HOW PROTECTED.
	No. per Pole.	Total Effective Area per Pole Sq. inch/m.	No.	Diameter. in./mm.	In Circuit.	Rule.			
MAIN GENERATOR ...	1	321	61	2.60	273	332	18	Rubber	Lead covered & Armoured
EQUALISER CONNECTIONS ...									
AUXILIARY GENERATOR...									
EMERGENCY GENERATOR ...									
ROTARY TRANSFORMER } MOTOR GENERATOR...									
ENGINE ROOM... }	1	25.60	19	1.30	41	64	10	"	"
BOILER ROOM... }									
AUXILIARY SWITCHBOARDS ...									
ACCOMMODATION E.R.D. & MIDSHIPS AFT.		25.60	19	1.30	55.3	64	135	"	"
		25.60	19	1.30	42.6	64	30	"	"
WIRELESS ...	1	25.60	19	1.30	39	64	180	"	"
SEARCHLIGHT ...	1	1.95	1	1.60	9	12.9	190	"	"
MASTHEAD LIGHT ...	1	1.95	1	1.60	3.65	12.9	112	"	"
SIDE LIGHTS ...	1	1.95	1	1.60	3.65	12.9	24	"	"
COMPASS LIGHTS ...	1	1.95	1	1.60	.07	12.9	30	"	"
POOP LIGHTS ...	1	1.95	1	1.60	.07	12.9	260	"	"
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. M.	Insulated with	HOW PROTECTED.
		No. Per Pole.	Total Effective Area per Pole Sq. inch/m.	No.	Diameter.	In Circuit.	Rule.			
REFRIGERATING MACHINE	1	1	25.6	19	1.30	41	64	84	Rubber	Lead covered & Armoured
BALLAST PUMP										
GALLEY FANS	2	1	2.08	1	1.60	7	12.9	150	"	"
MAIN DIESEL LINE PUMPS ...										
GENERAL SERVICE PUMP ...										
EMERGENCY BILGE PUMP ...										
SANITARY PUMP ...										
CIRC. SEA WATER PUMPS ...										
CIRC. FRESH WATER PUMPS...										
AIR COMPRESSOR ...										
FRESH WATER PUMP ...										
ENGINE TURNING GEAR...	1	1	65	19	2.10	115	142 1/2 H.R.	90	"	"
HOISTING MOTOR	1	1	25.60	19	1.30	38	68 1/2 H.R.	50	"	"
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 ...	1	1	14.25	7	1.60	21	46	80	"	"
VENTILATING FANS ...	2	1	14.25	7	1.60	28	46	110	"	"
L.O. Pumps motor	1	1	45.2	7	1.90	11	24	10	"	"
F.O. " "	2	1	45.2	7	1.90	11	24	18	"	"

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All Conductors are of annealed copper conforming to British Standard Specification No. 7.

The Insulated Conductors are guaranteed to withstand the immersion and resistance tests specified in the Rules.

The foregoing is a correct description.

K. Sakai

Electrical Engineers.

Date *Nov. 18, 1936.*

COMPASSES.

Distance between electric ~~generators or~~ motors and standard compass *30 feet*

Distance between electric ~~generators or~~ motors and steering compass *26 "*

The nearest cables to the compasses are as follows:—

A cable carrying *9* Ampères *6.5* feet from standard compass *8.5* feet from steering compass.

A cable carrying *0.09* Ampères *8* feet from standard compass *3* feet from steering compass.

A cable carrying *0.45* Ampères *14* feet from standard compass *12* feet from steering compass.

Have the compasses been adjusted with and without the electric installation at work at full power *with*

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 *✓* degrees on *✓* course in the case of the standard compass, and *✓* degrees on *✓* course in the case of the steering compass.

N. Hattory

Builder's Signature.

Date *Nov. 18, 1936.*

Is this installation a duplicate of a previous case *✓* If so, state name of vessel *Plans App. Note 4 of 16th July 1936*

General Remarks (State quality of workmanship, opinions as to class, &c. *The Electric Installation of this*

vessel has been installed onboard under Special Survey in accordance with the Rules & approved plans. Materials & Workmanship good.

On completion of installing the complete installation tried under full working conditions and megger tested with satisfactory results.

The Electric Installation of this vessel is eligible in my opinion to be classed with the machinery of this vessel *EX HMC 11-36.*

Noted

Mun

21.12.36

Total Capacity of Generators *Sixty (60) Kilowatts.*

The amount of Fee ... £ *28 : 10 :* When applied for, *18-11-1936*

Travelling Expenses (if any) £ *✓* : When received, *1.2.37 23/2*

J. Micholas

Surveyor to Lloyd's Register of Shipping.

Committee's Minute

TUE. 29 DEC 1936

TUE 2 FEB 1937

Assigned

see J.E. Machy Report.



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Foundation