

at 1000

No. 4588

Rpt. 13.

# REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office

Date of writing Report 22 Sept. 1930. When handed in at Local Office 22/9/1930 Port of YOKOHAMA

No. in Survey held at YOKOHAMA Date, First Survey 16<sup>th</sup> July Last Survey 15<sup>th</sup> Sept 1930  
Reg. Book. (Number of Visits... 10...)

on the Steel T. Sc. M.V. "KWANTO MARU" Tons { Gross 8601  
Net 5195

Built at Yokohama By whom built Yokohama Dock Co. Ltd Yard No. 179 When built 1930.

Owners Kishimoto Kisen Kaisha Port belonging to Fuchu.

Electric Light Installation fitted by Yokohama Dock Co. Ltd Contract No. 179 When fitted 1930.

Is the Vessel fitted for carrying Petroleum in bulk no.

System of Distribution Two wire

Pressure of supply for Lighting 100 volts, Heating 220 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 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 yes., is an adjustable regulating resistance fitted in series with each shunt field 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 Bottom platform of engine room forward.

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 yes.

Main Switch Boards, where placed Forward end of engine room. 2nd platform.

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 yes

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 and 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.

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 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, 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 double pole circuit breaker. For outgoing circuits 28 double pole single throw switches with fuses.

Instruments on main switchboard 9 ammeters 5 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 or V of the Rules yes.

**Fall of Pressure,** state maximum between bus bars and any point of the installation under maximum load 5 Volts from Vent fan

**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 yes.

**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 Metal clips

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 yes.

**Joints in Cables,** state if any, and how made, insulated, and protected Connected by metal screws in metal joint boxes, boxes protected by carbon cases.

**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 Rubber insulated wire .007 sq in.

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 yes.

**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 storerooms 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 By 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 proof fittings, how are the cables led through steel tubes.

where are the controlling switches situated outside the spaces.

**Searchlight Lamps,** No. of 4, whether fixed or portable fixed, are their fittings as per Rule yes.

**Arc Lamps,** other than searchlight lamps, No. of 1, 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.

**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 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	3	275	230	1190	375	Diesel Engines	Fuel Oil	Above 150° F.
AUXILIARY								
EMERGENCY								
ROTARY TRANSFORMER	2	15/12	220/100	79/120	1500			

GENERATOR, LIGHTING AND HEATING CONDUCTORS.

DESCRIPTION.	No. per Pole.	CONDUCTORS. Total Effective Area per Pole Sq. Ins.	COMPOSITION OF STRAND.		TOTAL MAXIMUM CURRENT. AMPERES.		Approximate Length (Lead and Return) Feet.	Insulated with	HOW PROTECTED.
			No.	Diameter.	In Circuit.	Rule.			
MAIN GENERATOR	3	325/91	.103	.103	1190	1383	60	Rubber	Lead covered & Armoured
EQUALISER CONNECTIONS	2	810/61	.093	.093	400	576	30	"	"
AUXILIARY GENERATOR	2	225							
EMERGENCY GENERATOR	2	225							
ROTARY TRANSFORMER MOTOR	1	.060/19	.064	.064	49	83	38	"	"
ROTARY TRANSFORMER GENERATOR	1	.195/37	.083	.083	120	184	38	"	"
ENGINE ROOM	1	.007/7	.036	.036	23	24	160	"	"
BOILER ROOM									
AUXILIARY SWITCHBOARDS	2	390/37	.083	.083	335	368	149	"	"
for Re. machines	2	390/37	.083	.083	364	368	96	"	"
for Cargo Winch No. 1	2	810/61	.093	.093	464	576	268	"	"
" " " No. 2	2	810/61	.093	.093	360	576	204	"	"
" " " No. 3	2	810/61	.093	.093	360	576	390	"	"
" " " No. 4	2	810/61	.093	.093	462	576	204	"	"
ACCOMMODATION	1	100/19	.083	.083	50	118	210	"	"
WIRELESS	1	.0221/4	.064	.064	32	46	326	"	"
SEARCHLIGHT	1	.001/3	.029	.029	2	7.8	30	"	Lead covered, Armoured & Braided
MASTHEAD LIGHT	1	.001/3	.029	.029	4	7.8	400	"	"
SIDE LIGHTS	1	.001/3	.029	.029	4	7.8	80	"	"
COMPASS LIGHTS	1	.001/3	.029	.029	16	7.8	26	"	"
POOP LIGHTS	1	.001/3	.029	.029	4	7.8	450	"	"
CARGO LIGHTS	1	.0221/7	.064	.064	40	46	1200	"	"
ARC LAMPS								"	"
HEATERS FOR OIL BURNERS	1	.007/7	.036	.036	14	24	40	"	"

MOTOR CONDUCTORS.

DESCRIPTION.	No. of Motors.	CONDUCTORS. No. Per Pole.	Total Effective Area per Pole Sq. Ins.	COMPOSITION OF STRAND.		TOTAL MAXIMUM CURRENT. AMPERES.		Approximate Length (Lead and Return) Feet.	Insulated with	HOW PROTECTED.
				No.	Diameter.	In Circuit.	Rule.			
BALLAST PUMP	1	1	.060/19	.064	.064	80	83	20	Rubber	Lead covered & Armoured
MAIN BILGE LINE PUMPS										
GENERAL SERVICE PUMP	1	1	.060/19	.064	.064	80	83	72	"	"
EMERGENCY BILGE PUMP										
SANITARY PUMP	1	1	.0221/4	.064	.064	31	46	18	"	"
CIRC. SEA WATER PUMPS										
CIRC. FRESH WATER PUMPS										
AIR COMPRESSOR	2	2	.810/61	.093	.093	382	576	176	"	"
FRESH WATER PUMP										
ENGINE TURNING GEAR	2	1	.060/19	.064	.064	60	83	172	"	"
ENGINE REVERSING GEAR										
LUBRICATING OIL PUMPS	2	1	.195/37	.083	.083	160	184	282	"	"
OIL FUEL SERVICE PUMP	2	1	.0019/3	.029	.029	70	7.8	118	"	"
WINDLASS	1	1	.405/61	.093	.093	382	452 (half current)	200	"	"
WINCHES, FORWARD	5 tons	2	.195/37	.083	.083	222	247	38	"	"
3 tons	8	1	.100/19	.083	.083	120	142	38	"	"
WINCHES, AFT	5 tons	3	.195/37	.083	.083	222	247	36	"	"
3 tons	6	1	.100/19	.083	.083	120	142	38	"	"
STEERING GEAR										
(a) MOTOR GENERATOR										
(b) MAIN MOTOR	1	1	.195/37	.083	.083	133	184	530	"	"
WORKSHOP MOTOR	1	1	.0019/3	.029	.029	70	7.8	74	"	Lead covered, Armoured & Braided
VENTILATING FANS	1	1	.0221/4	.064	.064	30.4	46	366	"	Lead covered & Armoured
Cooling pump motors	2	2	.810/61	.093	.093	448	576	196	"	"
Fuel oil transfer pumps	2	1	.060/19	.064	.064	76	83	120	"	"
Turbo blowers	3	2	1.50/91	.103	.103	735	922	224	"	"
CO2 compressors	2	1	.195/37	.083	.083	140	184	96	"	"
Brine pumps	2	1	.0221/4	.064	.064	21	46	20	"	"
Refrigerating oil pumps	2	1	.0221/4	.064	.064	21	46	16	"	"

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.

R. Miyake Electrical Engineers.

Date 18<sup>th</sup> Sept 1930

COMPASSES.

Distance between electric generators or motors and standard compass Engine room fan motor 30 feet.

Distance between electric generators or motors and steering compass " " " " 27 "

The nearest cables to the compasses are as follows:—

A cable carrying .16 Ampères 8 inches feet from standard compass 8 inches feet from steering compass. (Compass Light)

A cable carrying 4 Ampères 13 feet from standard compass 4 feet from steering compass.

A cable carrying .1 Ampères 12 feet from standard compass 6 feet from steering compass.

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

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.

J. Tsuchiya

Builder's Signature.

Date 18<sup>th</sup> Sept 1930

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 machinery and installation of this vessel have been fitted aboard under special survey. Materials and workmanship good. On completion of fitting all tried under full working conditions, insulation tests etc. carried out and all found in order.

It is submitted that this vessel is eligible for THE RECORD, Etec. Light

27/10/30

Total Capacity of Generators 425 Kilowatts.

The amount of Fee ... YEN 496.00 : When applied for, 26/9/30  
Travelling Expenses (if any) £ 20.00 : When received, 29.10.30

J. Micholas  
Surveyor to Lloyd's Register of Shipping.

Committee's Minute

Assigned



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