

# REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office... 17 SEP 1934

Date of writing Report 12<sup>th</sup> August 1934 When handed in at Local Office 13/8/1934 Port of Yokohama  
 No. in Survey held at Uraga Date, First Survey 26<sup>th</sup> January Last Survey 9<sup>th</sup> August 1934  
 Reg. Book. 40264 on the Steel S.S. M.Y. "KANO MARU" (Number of Visits... 17)  
 Tons { Gross 6940  
 Net 3785  
 Built at Uraga By whom built Uraga Dock Co Yard No. 386 When built 1934-8  
 Owners Kokusai Kisen Kabushiki Kaisha Port belonging to Tokio  
 Electric Light Installation fitted by Uraga Dock Co Contract No. When fitted 1934  
 Is the Vessel fitted for carrying Petroleum in bulk No

System of Distribution Two wire insulated  
 Pressure of supply for Lighting 220 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

Position of Generators Port Side Engine Room bottom platform  
 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 Engine Room bottom platform, forward end.

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, if situated near unprotected are they protected from mechanical injury and damage from water, steam or oil Yes

woodwork or other combustible material, state distance of same horizontally from or vertically above the switchboards Yes 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 Yes  
 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 a double pole circuit breaker with overload and Reverse current trips and a single pole equalizer switch. For each outgoing circuit, a double pole fuse and switch

Instruments on main switchboard 17 ammeters 3 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 testing lamp with resistance fitted in series for each pole

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



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**Cables:** Single, twin, concentric, or multicore. Single & twin 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 10.5 volt for power & heating 5.7 for lighting

**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 metal hangers and 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 end of cables secured by screws in metal joint 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 0.03 sq. inch for earth lamps

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. Second deck Starboard Side Emergency generator room. Controlled by a double pole change over switch and fuse for each outgoing circuit. Generator driven by a Heavy oil engine

**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 No

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 ✓

**Searchlight Lamps,** No. of One, whether fixed or portable portable, 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 or Vertical, 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 ✓, 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 ✓

**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 ✓

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	3	180	225	800	300	Heavy oil engine	Heavy oil	above 150° F.	
AUXILIARY	✓								
EMERGENCY	1	30	225	133	700	do.	do.	do.	
ROTARY TRANSFORMER									

GENERATOR, LIGHTING AND HEATING CONDUCTORS.										
DESCRIPTION.	No. per Pole.	CONDUCTORS.		COMPOSITION OF STRAND.		TOTAL MAXIMUM CURRENT. AMPERES.		Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED.
		Total Effective Area per Pole Sq. Ins.	No.	Diameter.	In Circuit.	Rule.				
MAIN GENERATOR	2	1.487	91	.103	800	922	200	Vulcanized Rubber	Lead covered & armoured	
EQUALISER CONNECTIONS	1	.7435	91	.103		461	100	do.	do.	
AUXILIARY GENERATOR										
EMERGENCY GENERATOR	1	.2465	37	.093	133	244	20	do.	do.	
ROTARY TRANSFORMER										
ENGINE ROOM No 5 J.B. (1)	1	.00701	7	.036	13.6	24	40	do.	do.	
Boiler Room " " (2)	1	.00701	7	.036	13.6	24	40	do.	do.	
Accommodation										
AUXILIARY SWITCHBOARDS										
J.B. for No 1 F.B.	1	.00322	1	.064	2.8	12.9	260	do.	do.	
No 2 Fuse Box	1	.01462	7	.052	9	37	200	do.	do.	
No 3 " "	1	.01462	7	.052	15	37	150	do.	do.	
No 4 " "	1	.00701	7	.036	5.5	24	150	do.	do.	
No 1 Joint Box	1	.0396	19	.052	59	64	170	do.	do.	
No 2 " "	1	.01462	7	.052	18	37	260	do.	do.	
No 3 " "	1	.02214	7	.064	18.9	46	360	do.	do.	
No 4 " "	1	.01462	7	.052	17.6	37	180	do.	do.	
WIRELESS	1	.00701	7	.036	20	24	210	do.	do.	
SEARCHLIGHT	1	.0396	19	.052	50	64	30	do.	do.	
MASTHEAD LIGHT	1	.00322	1	.064	.27	12.9	600	do.	do.	
SIDE LIGHTS	1	.00322	1	.064	.27	12.9	50	do.	do.	
COMPASS LIGHTS	1	.00181	1	.048	.05	7.2	40	do.	Lead covered	
POOP LIGHTS	1	.00322	1	.064	.27	12.9	7.4	do.	Lead covered & armoured	
CARGO LIGHTS	1	.00181	1	.048	1.4	7.2	200	do.	do.	
ARC LAMPS										
HEATERS	1	.00322	1	.064	4.5	12.9	15	do.	Lead covered	

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 Effective Area per Pole Sq. Ins.	No.	Diameter.	In Circuit.	Rule.			
BALLAST PUMP	1	1	.1478	37	.072	120	152	190	Vulcanized Rubber	Lead covered & armoured
MAIN BILGE LINE PUMPS	1	1	.01462	7	.052	32.5	37	210	do.	do.
GENERAL SERVICE PUMP	1	1	.2465	37	.093	155	214	220	do.	do.
EMERGENCY BILGE PUMP										
SANITARY PUMP	1	1	.0396	19	.052	53.5	64	210	do.	do.
CIRC. SEA WATER PUMPS	2	1	.4064	61	.093	279	288	130	do.	do.
CIRC. FRESH WATER PUMPS	2	1	.4985	61	.103	300	332	150	do.	do.
AIR COMPRESSOR	1	1	.6062	91	.093	340	384	110	do.	do.
FRESH WATER PUMP	1	1	.00455	7	.029	13.9	18.2	90	do.	do.
ENGINE TURNING GEAR	1	1	.0396	19	.052	60	65	230	do.	do.
ENGINE REVERSING GEAR										
LUBRICATING OIL PUMPS	2	1	.1478	37	.072	135	152	150	do.	do.
OIL FUEL TRANSFER PUMP	2	1	.1478	37	.072	117	152	160	do.	do.
WINDLASS	1	1	.4985	61	.103	388	422	500	do.	do.
SWITCHBOARD to distribution Board										
WINCHES, FORWARD	No 1	1	.6062	91	.093	450	641	360	do.	do.
No 2	1	1	.6062	91	.093	540	641	230	do.	do.
SWITCHBOARD to distribution Board										
WINCHES, AFT	No 3	1	.4064	61	.093	360	452	350	do.	do.
No 4	1	1	.6062	91	.093	450	641	450	do.	do.
STEERING GEAR—										
(a) MOTOR GENERATOR	1	1	.1009	19	.083	80	118	50	do.	do.
(b) MAIN MOTOR	1	1	.0600	19	.064	60	83	650	do.	do.
WORKSHOP MOTOR	1	1	.00455	7	.029	12	18.2	140	do.	do.
VENTILATING FANS	4	1	.00455	7	.029	15	18.2	150	do.	do.
5 Ton WINCH	5	1	.2465	37	.093	205	244	200	do.	do.
3 Ton WINCH	14	1	.1168	37	.064	130	138	170	do.	do.
PORT SERVICE PUMP	1	1	.01462	7	.052	32	37	160	do.	do.
FUEL OIL	2	1	.00701	7	.036	22	24	40	do.	do.
LUB. OIL	2	1	.00701	7	.036	22	24	40	do.	do.



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.

*H. Fujisaki* for U. D. C. Electrical Engineers.

Date *Aug 15, 1934*.

#### COMPASSES.

Distance between electric generators or motors and standard compass *18 feet from Rich Lux motor (100 watts)*

Distance between electric generators or motors and steering compass *24 feet from Rich Lux motor. 14 feet from Cabin Fan motor (50 watts)*

The nearest cables to the compasses are as follows:—

A cable carrying *0.3* Amperes *10* feet from standard compass *10* feet from steering compass.

A cable carrying *60* Amperes *14* feet from standard compass *6* feet from steering compass.

A cable carrying \_\_\_\_\_ Amperes \_\_\_\_\_ feet from standard compass \_\_\_\_\_ 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 *Nil* degrees on \_\_\_\_\_ course in the case of the standard compass, and \_\_\_\_\_ degrees on \_\_\_\_\_ course in the case of the steering compass.

*H. Fujisaki* for U. D. C. Builder's Signature.

Date *Aug 15, 1934*.

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 electric appliances and*

installation has been fitted on board under Special Survey in accordance with the Rules and approved plans. Materials and Workmanship good. After completion of fitting out all tried under full working conditions. Insulation Resistance Tests as per Rules carried out satisfactorily except in the case of the 3 Main Generator, Compressor, and Ballast pump motor, results for which were somewhat low. As the Vessel is urgently required, it is proposed to retest these 3 Generator and two motors in about 4 months time when the Vessel returns to Yokohama from New York.

This Vessel's electric installation is eligible in my opinion to have the record of +L. M. C 8.34 in the Register Book

*Noted*

*Ym*

*21.9.34*

*RL*

Total Capacity of Generators *570* Kilowatts.

The amount of Fee ... *£ 45.15* : *22.8.1934*

Travelling Expenses (if any) *£* *✓* : *5.11.34*

*G. H. Macdonald*  
Surveyor to Lloyd's Register of Shipping.

Committee's Minute *TUE. 2 OCT 1934*

Assigned *See Yka JE 5343*

2m. 331.—Transfer  
The Surveyors are requested not to write on or below the space for Committee's Minute.



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