

**REPORT ON ELECTRIC FITTINGS.**

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

13 JUL 1931

Received at London Office

Date of writing Report 19th June 31 When handed in at Local Office 19th June 31 Port of NAGASAKI.

No. in Survey held at NAGASAKI. Date, First Survey 8th April Last Survey 30th May 1931.  
Reg. Book. (Number of Visits 8)91193 on the Steel Screw Motor Ship "KANAN MARU".  
in Sup. Tons { Gross 3280.09  
Net 1876.74

Built at Nagasaki. By whom built Mitsubishi Zosen Kaisha Yard No. 490 When built 1931

Owners Dairen Kisen Kabushiki Kaisha. Port belonging to Dairen.

Electric Light Installation fitted by Nagasaki Works  
Mitsubishi Zosen Kaisha, Ltd. Contract No. When fitted 1931

System of Distribution Two wire system.

Pressure of supply for Lighting 220 volts, Heating 220 volts, Power 220 volts.

Direct or Alternating Current, Lighting Direct current. Power Direct current.

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- except 3.5 KW 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 In 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 at 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 micaite 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 A double pole circuit breaker with overload trip time lag device and reverse current trip and single pole equalizer switch interlocked with the circuit breaker as per rule and a double pole knife switch for each of 65 K.W. Main Generator, a double pole knife switch and fuse for 3.5 K.W. Generator: a double pole circuit breaker with overload trip time lag device or a double pole switch and fuse for each of out going circuits.

Instruments on main switchboard 5 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 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



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Foundation

W1278-0151

**Cables:** Single, twin, concentric, or multicore Single or Multicore are the cables insulated and protected as per Tables IV or V of the Rules Yes

**Fail of Pressure,** state maximum between bus bars and any point of the installation under maximum load 18.4 volts for power, 5.25 volts for lighting, 4.14 volts for heater.

**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 Clamped to metal bracket or perforated galvanized steel plate by metal clip and protected by metal cover or pipe where exposed to risk of any damage.

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 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 In junction boxes as per rule.

**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 There is no earthing connection except for wireless telegraph, sectional area of which is 0.007 square inch.

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 stowholds 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 Lamps in stores are protected by strong metal 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 /

how are the cables led /

where are the controlling switches situated /

**Searchlight Lamps, No. of** /, whether fixed or portable /, 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 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 Totally enclosed, 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	Amps.	Revs. per Min.		Fuel Used	Flash Point of Fuel
MAIN	3	65	220	295	450	Diesel Engine.	Diesel Oil.	Above 150° F
AUXILIARY								
EMERGENCY	1	3.5	220	16	450	Hot-Bulb Eng (6 HP)	" "	" "
ROTARY TRANSFORMER	1	2 K.V.A.	200	10	3000	D.C. Shunt Motor. 220V. 17A.	" "	" "
	1	.25 "	100	2.5	3000	" "	" "	30V. 19A.

**LIGHTING AND HEATING CONDUCTORS.**

Ref. No.	DESCRIPTION.	No. of Conductors.	Effective Area of each Conductor. Sq. Ins.	COMPOSITION OF STRAND.		Total Maximum Current. Amperes.	Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED.
				No.	Diameter.				
1	No.1 Dynamo.	2	.605	91	.092	295	150	Rubber	Lead Covered
2	Emergency Dynamo.	2	.00701	7	.036	16	70	"	"
3	Ballast pump.	2	.1168	37	.064	110	170	"	"
4	Jacket & piston cooling pump.	2	.600	19	"	67	100	"	"
5	Bilge pump.	2	"	"	"	60	170	"	"
6	Sanitary & Fresh water pump.	2	.00701	7	.036	22.6	"	"	"
7	Main engine turning motor.	2	"	"	"	20	110	"	"
8	Work shop motor	2	"	"	"	13.5	180	"	"
9	Fusebox for motor	2	.0127	"	.048	38.6	60	"	"
10	Fuel oil transfer pump.	2	.00701	"	.036	21	45	"	"
11	Lub. oil purifier	2	.00322	1	.064	6.2	140	"	"
12	Junction box for oil heater.	2	.0344	19	.048	54.6	130	"	"
13	Lub. oil tank heater	2	.0127	7	"	27.3	100	"	"
14	No.1 Fuse board	2	.605	91	.092	645	270	"	Lead covered & armoured
15	Windlass	2	.405	61	"	197	260	"	"
16	No.2 cargo winch.	2	.1168	37	.064	112	70	"	"
17	No.2 Fuse board	2	.605	91	.092	560	310	"	"
18	Mooring winch	2	.1168	37	.064	112	230	"	"
19	Steering motor	2	.02214	7	"	42	470	"	"
20	Motor siren	2	.00701	"	.036	23	450	"	"
21	Range blower	2	.00322	1	.064	4.5	270	"	Lead covered
22	Wireless tel. switchboard	2	.00701	7	.036	17	150	"	"
23	Motor alternator	2	"	"	"	19	80	"	"
24	No.1 Sub. main Board	2	.02214	"	.064	32.95	160	"	"
25	No.1 distribution board.	2	.00701	"	.036	12	120	"	"
26	No.2 " " "	2	"	"	"	7.3	6	"	"
27	No.3 " " "	2	"	"	"	3.3	280	"	Lead covered & armoured
28	No.4 " " "	2	"	"	"	2.7	340	"	"
29	No.5 " " "	2	"	"	"	7.65	120	"	Lead covered

**MOTOR CONDUCTORS.**

Ref. No.	DESCRIPTION.	No. of Conductors.	Effective Area of each Conductor. Sq. Ins.	COMPOSITION OF STRAND.		Total Maximum Current. Amperes.	Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED.
				No.	Diameter.				
30	No.6 " " "	2	"	"	"	5.2	180	"	"
31	No.2 Sub. Main board	2	"	"	"	15	6	"	"
32	No.7 distribution board.	2	"	"	"	6	6	"	"
33	No.8 " Elec. P. " "	2	"	"	"	9	6	"	Lead covered & armoured
34	No.3 Sub. Main Board	2	"	"	"	9.1	300	"	"
35	500 watt cargo light	2c	.00322	1	.064	2.3	120	"	"
36	Cargo light flex.	3c	.0048	110	.0076	2.3	80	"	Flex. cord.
37	240 watt cargo cluster	2c	.00322	1	.064	2.3	120	"	Lead covered & armoured
38	Cargo cluster flex. cord.	3c	.0048	110	.0076	2.3	80	"	Flex. cord.
39	Portable lamp flex. cord.	3c	.0017	40	"	0.18	50	"	"
40	No.4 Sub. Main board.	2	.00701	7	.036	9.1	380	"	Lead covered & armoured
41	500 W. cargo light	2c	.00322	1	.064	2.3	120	"	"
42	240 W. cargo cluster.	2c	"	1	"	2.4	120	"	"
43	Navigation light car.	2	.00701	7	.036	4	260	"	Lead covered
44	Fore mast lamp.	4c	.00322	1	.064	0.27	260	"	Lead covered & armoured
45	Stern lamp.	4c	"	1	"	0.27	320	"	"
46	No.1 Main dist. board.	1	.1168	37	"	129.3	180	"	Lead covered
47	No.5 Sub. Main board.	2	.0127	7	.048	29.55	6	"	"
48	2 KW heater (Captain)	2	.00322	1	.064	9.1	100	"	"
49	1 KW. " (2nd Off)	2	.00322	1	"	4.55	110	"	"
50	No.6 Sub. Main board.	2	.02214	7	"	38.6	6	"	"
51	1 KW heater (state room)	2	.00322	1	"	4.55	130	"	"
52	1.5 KW " (Chief eng.)	2	"	1	"	6.8	160	"	"
53	No.7 Sub. main board.	2	.02212	7	"	31.6	6	"	"
54	1 KW heater (steward)	2	.00322	1	"	4.55	140	"	"
55	1.5 KW " (Mass Rm)	2	"	1	"	6.8	170	"	"
56	No.8 Sub. Main board.	2	.0127	7	.048	29.5	100	"	"
57	No.2 Main dist. board.	1	.186	37	.08	133	170	"	"
58	6.5 KW Elec. bath heater.	2	.02212	7	.064	30	140	"	"
59	8 KW Elec. bath heater.	2	"	7	"	36.5	70	"	"

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.

NAGASAKI WORKS, MITSUBISHI ZOSEN KAISHA, LTD.

*J. Motono*  
 GENERAL MANAGER

Electrical Engineers.

Date

COMPASSES.

Distance between electric generators or motors and standard compass 26 feet from bracket fan motor.

Distance between electric generators or motors and steering compass 15 feet from bracket fan motor.

The nearest cables to the compasses are as follows:—

A cable carrying 0.1 Ampères 1 feet from standard compass 1 feet from steering compass.

A cable carrying 4 Ampères 18 feet from standard compass 20 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 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 / degrees on any and every course in the case of the standard compass, and / degrees on any and every course in the case of the steering compass.

NAGASAKI WORKS, MITSUBISHI ZOSEN KAISHA, LTD.

*J. Motono*  
 GENERAL MANAGER

Builder's Signature.

Date

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 materials and workmanship are good and the installation has been fitted in accordance with the Rules, tested under working conditions and found satisfactory.

Plans sent under separate cover of:- Wiring diagram (2 sheets).

It is submitted that  
 this vessel is eligible for  
 THE RECORD.

*Elec. Light*  
*J.P.*

*12/18/31*

Total Capacity of Generators 198.5 Kilowatts.

The amount of Fee ... £ 364:25 : When applied for, 12. 6. 31

Travelling Expenses (if any) £ : : When received, 21. 7. 31

*George Anderson*  
 Surveyor to Lloyd's Register of Shipping.

Committee's Minute

Assigned

*Elec Lt*

Imp. 228.—Transfer.  
 (The Surveys are requested not to write on or below the space for Committee's Minute.)



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