

# REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Date of writing Report 8th Apr 1935 When handed in at Local Office 8th Apr 1935 Port of NAGASAKI.

No. in Survey held at NAGASAKI. Date, First Survey 6th Feby. Last Survey 30th March 1935  
Reg. Book. (Number of Visits 7)

90527 on the Steel Twin Screw Steamer "NEKKA MARU". Tons { Gross 6788.97  
Net 3911.40

Built at Nagasaki By whom built Mitsubishi Jukogyo K. Yard No. 594 When built 1935

Owners Osaka Shosen Kabushiki Kaisha. Port belonging to Osaka.

Electric Light Installation fitted by Mitsubishi Jukogyo Kaisha. Nagasaki Contract No. / When fitted 1935

Is the Vessel fitted for carrying Petroleum in bulk No.

System of Distribution Two wire system.

Pressure of supply for Lighting 110 volts, Heating / volts, Power 110 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 / No, 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 Main Engine Room, Starboard side.

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 Main Engine Room, aft, near Generators.

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 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 over-load circuit breaker and a double pole knife switch for each generator, a double pole knife switch and enclosed fuse for each of out-going circuits.

Instruments on main switchboard Two ammeters One 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 By 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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**Cables:** Single, twin, concentric, or multicore Single and multicore 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 4.95 volts for Lighting. 6.65 volts for Power.

**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 on galvanized perforated steel plate by metal clip and protected by metal cover or steel pipe where necessary.

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 Yes

**Joints in Cables,** state if any, and how made, insulated, and protected /

**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 that for the wireless telegraph which has the sectional area of 14.25 sq. millimeter.

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 8 K.W. Emergency dynamo driven by gasoline engine, fitted in Emergency dynamo room on boat deck. Supplies the power for emergency lighting throughout the ship, navigation light, boat embarkation light & wireless telegraph, each circuit controlled by S.P. change-over knife switch and D.P. enclosed fuse.

**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 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 /

**Are 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 /, 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	2	80	110	72.7	1600	Steam turbine eng.		
AUXILIARY								
EMERGENCY	1	8	110	72.8	1500	Gasoline engine.		
ROTARY TRANSFORMER	1	1 KVA	100	10	3333	D.C. Motor (100V. 20A)		
	1	1/2"	"	2.5	3750	" (20V. 18A)		

**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 Effective Area per Pole Sq. Ins.	No.	Diameter.	In Circuit.	Rule.			
MAIN GENERATOR									
EQUALISER CONNECTIONS									
AUXILIARY GENERATOR									
EMERGENCY GENERATOR									
ROTARY TRANSFORMER MOTOR GENERATOR									
ENGINE ROOM									
BOILER ROOM									
AUXILIARY SWITCHBOARDS									
ACCOMMODATION									
WIRELESS									
SEARCHLIGHT									
MASTHEAD LIGHT									
SIDE LIGHTS									
COMPASS LIGHTS									
POOP LIGHTS									
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.	Insulated with	HOW PROTECTED.
		No. per Pole.	Total Effective Area per Pole Sq. Ins.	No.	Diameter.	In Circuit.	Rule.			
BALLAST PUMP										
MAIN BILGE 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										
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										
VENTILATING FANS										

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 JUKOGYO KABUSHIKI KAISHA.

*T. Inagaki* Electrical Engineers. Date **APR 10 1935**  
 GENERAL MANAGER.

COMPASSES.

Distance between electric generators or motors and standard compass **4.5 Meters** from Fire detector fan-motor on wheel house top.  
 Distance between electric generators or motors and steering compass **23 meters** from Ventilator fan motor on aft winch platform.

The nearest cables to the compasses are as follows:—

A cable carrying **0.2** Ampères **0.3 meters** from standard compass **0.3 meters** 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 **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 **Nil** degrees on **Any and every** course in the case of the standard compass, and **Nil** degrees on **Any and every** course in the case of the steering compass.

NAGASAKI WORKS, MITSUBISHI JUKOGYO KABUSHIKI KAISHA.

*T. Inagaki* Builder's Signature. Date **APR 10 1935**  
 GENERAL MANAGER.

Is this installation a duplicate of a previous case **Yes** If so, state name of vessel **"Kitsurin Maru"**  
 Nag. Rpt. No. 2014.

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 full working and overload conditions and found satisfactory.  
 This case is eligible in our opinion to have the notation of "Electric Lights and Wireless" in the Register Book.

*Noted*  
*L.H.*  
*8/5/35*  
*[Signature]*

Total Capacity of Generators **168** Kilowatts.

The amount of Fee ... £ **34-18-0** : **1. 4. 35** When applied for.  
 Travelling Expenses (if any) £ : : **10. 4. 35** When received.

*H.P. Buchanan & T. Kumishiro*  
 Surveyor to Lloyd's Register of Shipping.

Committee's Minute **FRI. 10 MAY 1935**

Assigned *see J.E. Machy Report.*

Rpt. 9a.

Port of **NAGASAKI.**

Continuation of Report No. 2028 dated 8th April 1935 on the

Ref. No.	Description.	Conductors Composition		Total Maximum current amps	Approximate length (L & R) meters.	Insulated with.	How protected.
		No. of Strands	Dia.				
1	No.1 Turbo Generator Inter Communication	782	91	2.35	727	768	60
2	No.1 Fuse Bd for Vent.fan.	75.3	37	1.63	72.8	130	64
3	5 HP Vent fan motor	127	19	2.10	179	184	60
4	3 HP " "	25.6	19	1.30	47	64	60
5	No.2 Fuse Bd for Cooking App.	9.45	7	"	30	37	86
6	Hot plate for bakery	127.45	37	1.30	192.6	221	90
7	Toaster for 1st Class pantry	9.45	7	1.30	25	37	16
8	7.5 KW Baker oven	38.7	19	1.63	75	83	36
9	Turbine turning motor	9.45	7	1.30	31	37	36
10	No.3 Fuse board	"	7	"	15	24	36
11	1.5 HP Lub oil purifier	4.52	7	.91	"	24	12
12	Eng. Rm vent fan motor	9.45	7	1.30	20	24	18
13	Bore connection	75.3	37	0.064	100	37	26
14	W.L.T. switchboard	25.6	19	1.30	20	64	68
15	Motor for 1 KVA Alternator	14.25	7	1.63	20	24	60
16	1 KVA alternator	9.45	7	1.63	10	46	60
17	Motor for 1/2 KVA alternator	25.6	19	1.60	18	37	60
18	1/2 KVA alternator	4.52	7	.91	2.5	64	60
19	Secondary battery	25.6	19	1.20	19	64	60
20	Emergency generator	38.7	"	1.63	72.8	83	12
21	No.1 Main dist. board	65	"	2.10	99.7	118	64
22	No.1 Submain board	25.6	"	1.30	60.2	64	40
23	No.1 Dist. board	4.52	7	.91	12.6	24	8
24	No.2 " "	"	"	"	6.6	"	8
25	No.3 " "	"	"	"	14.6	"	8
26	No.4 " "	"	"	"	16	"	"
27	No.5 " "	"	"	"	10	"	"
28	No.2 Submain board	25.6	19	1.30	39.1	64	20
29	No.6 Dist board	4.52	7	.91	14.5	24	20
30	No.7 " "	9.45	7	1.30	16.2	37	"
31	No.8 " "	4.52	7	.91	8.4	24	"
32	No.3 Submain board	38.7	19	1.63	68.9	83	46
33	No.9 Dist board	9.45	7	1.30	19.8	37	64
34	No.10 " "	4.52	"	.91	8.6	24	46
35	No.11 " "	"	"	"	16.8	24	46
36	No.12 " "	"	"	"	7.9	"	"
37	No.13 " "	"	"	"	10.8	"	"
38	No.4 Submain board	14.25	"	1.63	31.3	46	36
39	No.14 Dist board	9.45	"	1.30	13.6	37	110
40	Kinematograph	4.52	"	.91	10	24	36
41	No.15 Dist board	9.45	"	1.30	17.7	37	60
42	No.5 Submain board	25.6	19	1.30	41.5	64	54
43	No.16 Dist board	4.52	7	.91	7.6	24	104
44	No.17 " "	"	"	"	6.1	"	104
45	No.18 " "	"	"	"	4.1	"	176
46	No.19 " "	9.45	"	1.30	12.6	37	120
47	No.20 " "	49	19	1.85	91.25	97	36
48	No.6 Submain board	25.6	"	1.30	54.4	64	36
49	No.21 Dist board	4.52	7	.91	7.6	24	46
50	No.22 " "	9.45	"	1.30	13.3	37	46
51	No.23 " "	4.52	"	.91	11.6	24	76
52	No.24 " "	9.45	"	1.30	16.3	37	76
53	Radio source	4.52	"	.91	11.6	24	76
54	No.7 Submain board	25.6	19	1.30	32.85	64	66
55	No.25 Dist board	4.52	7	.91	13.55	24	76
56	No.26 " "	9.45	"	1.30	17.2	37	64
57	No.8 Submain board	25.6	19	1.30	36.2	64	12
58	No.28 Dist board	4.52	7	.91	13.8	24	56
59	No.29 " "	"	"	"	10.2	"	22
60	No.30 " "	25.6	19	1.30	31.2	64	36
61	No.3 Main dist board	9.45	7	1.30	15.6	37	80
62	No.9 Submain board	4.52	"	.91	6	24	36
63	Fore mast cargo lamp	3.11	110	.19	3	15	36
64	Flex cord for cargo lamp	4.52	7	.91	4.8	24	36
65	No.1 hatch cargo cluster	3.11	110	.19	2.4	13	44
66	Flex cord " "	4.52	7	.91	4.2	24	20
67	No.2 hatch cargo cluster	3.11	110	.19	2.4	13	44
68	Flex cord " "	9.45	7	1.30	15.6	37	66
69	No.10 Submain board	4.52	"	.91	6	24	32
70	Main mast cargo lamp	3.11	110	.19	3	13	36
71	Flex cord " "	4.52	7	.91	4.8	24	34
72	No.4 hatch cargo cluster	3.11	110	.19	4.8	24	44
73	Flex cord " "	25.6	19	1.30	45.9	64	30
74	No.11 Submain board	9.45	7	1.30	24.9	37	2
75	No.31 Dist board	25.6	19	1.30	25.3	64	44
76	No.12 Submain board	4.52	7	.91	12.5	24	2
77	No.33 Dist board	"	"	"	12.8	"	24
78	No.34 " "	"	"	"	3.2	"	72
79	Navigation light	2.08	1	1.63	0.4	12.9	200
80	Fore mast head lamp	"	"	"	"	"	46
81	Starboard side lamp	"	"	"	"	"	44
82	Port side lamp	"	"	"	"	"	240
83	Main mast lamp	"	"	"	"	"	270
84	Stern lamp	"	"	"	"	"	64
85	No.13 Submain board	38.7	19	1.63	63.84	83	54
86	No.35 Dist board	4.52	7	.91	6.04	24	28
87	No.36 " "	"	"	"	9.91	"	52
88	No.37 " "	"	"	"	8.85	"	30
89	No.38 " "	"	"	"	12.07	"	84
90	No.39 " "	"	"	"	6.93	"	84
91	No.40 " "	"	"	"	7.26	"	84
92	No.41 " "	"	"	"	12.78	"	2

The Surveyor's certificate is requested not to write on or below the space for Committee's Minute.