

REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office.....

Date of writing Report 16th Jul 1937 When handed in at Local Office 16th Jul 1937 Port of NAGASAKI.No. in Survey held at NAGASAKI. Date, First Survey 16th Apr. 37 Last Survey 30th June 1937
Reg. Book. (Number of Visits.....8)on the Single Screw Motor Vessel "KOZUI MARU" Tons { Gross 7072
Net 5219Built at Nagasaki By whom built Mitsubishi J.K.K. Yard No. 672 When built 1937Owners Takachiho Shosen K.K. Port belonging to KobeElectric Light Installation fitted by Mitsubishi J.K.K. Nagasaki. Contract No. / When fitted 1937Is the Vessel fitted for carrying Petroleum in bulk NoSystem of Distribution Two wire system D.C.Pressure of supply for Lighting 220 volts, Heating 220 volts, Power 220 volts.Direct or Alternating Current, Lighting Direct current Power Direct currentIf 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 YesGenerators, do they comply with the requirements regarding rating Yes, are they compound wound Yesare 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 YesAre 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 YesPosition of Generators In Main Engine Room.is the ventilation in way of the generators satisfactory Yes, are they clear of all inflammable material Yesif 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 Yesare their axes of rotation fore and aft YesEarthing, are the bedplates and frames of the generating plant efficiently earthed Yes are the prime movers and their respective generators in metallic contact YesMain Switch Boards, where placed Fore Bulkhead in Main 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 Yesare 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 slabwith mica or micanite or other non-hygroscopic insulating material, and the slab similarly insulated from its framework Yesand is the frame effectively earthed Yes Are the fittings as per Rule regarding:— spacing or shielding of live partsYes, accessibility of all parts Yes, absence of fuses on back of board Yes, proportion of omnibusbars Yes, individual fuses to voltmeter, pilot or earth lamp Yes, connections of switches YesMain Switchgear, description pole switchgear for each generator and each outgoing circuit, and arrangement of equalizer switches A double pole knife switch and a double circuit breaker with over load release, reverse current trip & time-leg device and a single pole equalizer switch interlocked with the circuit breaker as per rule for each of 90 K.W. Dynamo: a double pole knife switch and d.p. fuse or double circuit breaker for each of out going circuits.Instruments on main switchboard 5 ammeters 2 voltmeters 3 REGULATORS 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 Lamp with fuse and switch.Switches, Circuit Breakers and Fusible Cut-outs, do these comply with the requirements of the Rules YesJoint 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 & 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 7.5 volts for Power. 7.74 volts 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 Clamped on perforated or unperforated steel plate by metal clips and protected by metal covers 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 By 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 the wireless telegraph, sectional area of which is 25.60 square millimeters.
/, 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 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 Lamp in stores are protected by strong metal guards, cover heavy glass, air tight, bowls.
 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 /, 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			Revs. per Min.	DRIVEN BY		
		Kilowatts.	Volts.	Ampères.		Fuel Used.	Flash Point of Fuel.	
MAIN	3	90	225	400	400	Diesel Engine	Diesel Oil	above 150° F.
AUXILIARY								
EMERGENCY								
ROTARY TRANSFORMER	1	2 KVA	250	8	3000	D.C. Motor 3.5 HP. 220V. 15A.		
	1	1/2 KVA	100	2.5	3750	D.C. Motor 0.45HP. 30V. 18A.		

GENERATOR, LIGHTING AND HEATING CONDUCTORS.

DESCRIPTION.	CONDUCTORS.		COMPOSITION OF STRAND.		TOTAL MAXIMUM CURRENT.		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.		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.

K. Shimidzu Electrical Engineers. Date 19-7-37
 for GENERAL MANAGER.

COMPASSES.
 Distance between electric generators or motors and standard compass 4.5 Meters from 1/4 HP. fire detector exhaust fan motor.
 Distance between electric generators or motors and steering compass 6 " " " " " " " " " " " "
 The nearest cables to the compasses are as follows :-
 A cable carrying 0.06 Amperes 0.3 Meter feet from standard compass 0.3 Meter feet from steering compass.
 A cable carrying - Amperes - feet from standard compass - 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 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.
K. Shimidzu Builder's Signature. Date 19-7-37
 for GENERAL MANAGER.

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.)

This installation has been constructed under Special Survey in accordance with the Rules and Approved Plans, and the materials and workmanship are good.

Full load, overload and parallel running tests have been carried out with satisfactory results.

All motors and lighting circuits have been tried under full working condition and found satisfactory.

This case is eligible in our opinion to have the notation of "Electric light & Wireless" in the Register Book.

Plans sent under separate cover of:- Wiring diagram of Power, Lighting & Cabin fan.

Noted.
HRJ 24/8/37

Total Capacity of Generators 270 Kilowatts.

The amount of Fee ... £ 38-5-0 : When applied for, 8. 7 19 37
 Travelling Expenses (if any) £ : : When received, 13. 10. 37
H. Buchanan + T. Pennick
 Surveyor to Lloyd's Register of Shipping.

Committee's Minute TUE. 24 AUG 1937
 Assigned See Nap J.C. 2262

Ref. No.	DESCRIPTION.	CONDUCTORS.		COMPOSITION OF STRAND.		TOTAL MAXIMUM CURRENT.		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.			
1	Cooling water & San. pump.	1	159.00	37	2.35	198.0	214.0	50	Rubber	Lead covered.
2	Lub. oil pump	1	25.60	19	1.30	58.8	64.0	36	"	"
3	Fuel oil transfer pump	1	12.25	7	1.63	43.8	46.0	44	"	"
4	Bilge & ballast pump	1	65.00	19	2.10	105.0	118.0	50	"	"
5	Bilge & G.S. pump	1	38.70	19	1.63	80.0	83.0	44	"	"
6	Bilge pump	1	25.60	19	1.30	50.0	64.0	36	"	"
7	Main Eng. turning motor	1	14.25	7	1.63	42.0	46.0	54	"	"
8	Work shop motor	1	4.52	7	.91	22.0	24.0	36	"	"
9	Fuel oil bur. unit	1	9.45	7	1.30	23.9	37.0	28	"	"
10	Fuel oil bur. unit (Motor)	1	4.52	7	.91	14.8	24.0	2	"	"
11	" (Heater)	1	4.52	7	"	9.1	"	2	"	"
12	Boiler tube cleaner motor	1	"	7	"	9.0	"	2	"	"
13	No. 2 fuse box	1	38.70	19	1.63	65.6	83.0	50	"	"
14	Lub. oil shifting pump	1	4.52	7	.91	7.3	24.0	10	"	"
15	Fuel oil service pump	1	4.52	7	"	"	"	10	"	"
16	Lub. oil purifier	1	4.52	7	"	14.0	"	18	"	"
17	Fuel oil purifier	1	"	7	"	"	"	14	"	"
18	Fresh water pump	1	"	7	"	9.0	"	28	"	"
19	Electric welder	1	159.00	37	2.35	200.00	214.0	16	"	"
20	Main Dynamo	1	480.00	91	2.60	400.0	461.0	44	"	"
21	No. 1 fuse board	1	262.00	61	2.35	387.0	452.0	90	"	"
22	Windlass Motor	1	195.00	37	2.60	245.0	283.0	56	"	"
23	5 ton Cargo winch	1	75.30	37	1.63	129.0	138.0	20	"	"
24	No. 2 Fuse board	1	262.00	61	2.35	361.0	452.0	30	"	"
25	5 ton cargo winch	1	75.30	37	1.63	129.0	138.0	58	"	"
26	3 ton cargo winch	1	75.30	37	"	112.0	"	56	"	"
27	No. 3 Fuse board	1	262.00	61	2.35	361.0	452.0	116	"	"
28	5 ton cargo winch	1	75.30	37	1.63	129.0	138.0	15	"	"
29	3 ton cargo winch	1	"	"	"	112.0	"	20	"	"
30	5 ton Mooring winch	1	"	"	"	"	"	60	"	"
31	Steering motor	1	25.60	19	1.30	52.5	65.0	7	"	"
32	"	1	"	"	"	"	"	188	"	"
33	No. 3 fuse box	1	49.00	"	1.85	74.4	97.0	34	"	"
34	Brine pump	1	4.52	7	.91	7.2	24.0	12	"	"
35	Ref. com. & Sea W. Cir. pump.	1	25.60	19	1.30	60.0	64.0	6	"	"
36	Wl. tel. switchboard	1	"	"	"	39.0	"	48	"	"
37	Motor-Generator (Motor)	1	4.52	7	.91	15.0	24.0	20	"	"
38	" (Gen)	1	"	7	"	8.0	"	20	"	"
39	" (Motor)	1	"	7	"	18.0	"	20	"	"
40	" (Gen)	1	"	7	"	2.5	"	20	"	"
41	Battery for Wl. Tel.	1	14.25	7	1.63	24.0	46.0	17	"	"
42	No. 1 fuse box	1	4.52	7	.91	7.2	24.0	16	"	"
43	No. 2 fuse box	1	"	7	"	2.2	24.0	48	"	"
44	Fire detector	1	2.08	1	1.63	0.6	12.9	4	"	"
45	Fire detector exh. F.	1	"	1	"	"	"	6	"	"
46	Submain board S.1.	1	9.45	7	1.30	20.67	37.0	36	"	"
47	Dist. board D.1.	1	4.52	7	.91	14.19	24.0	16	"	"
48	" " D.2.	1	"	7	"	6.48	"	1	"	"
49	" " D.3.	1	"	7	"	15.81	"	20	"	"
50	Bus-bar light in Eng. room	1	1.13	1	1.20	1.73	7.4	20	"	"
51	Eng. room batt. lamp.	1	4.52	7	.91	6.25	24.0	40	"	"
52	Chang. Dev. for Batt. Por. Lamp	1	1.13	1	1.20	0.55	7.4	1	"	"
53	Submain board S.2	1	9.45	7	1.30	18.76	37.0	90	"	"
54	Cargo light, No. 1 (Cargo Hatch)	1	4.52	7	.91	7.27	24.0	2	"	"
55	" " No. 1, 2 " "	1	2.08	1	1.63	4.54	12.9	37	"	L.C. & A.
56	" " " " " "	1	"	1	"	2.27	"	2	"	"
57	Flex. cord for cargo light	1	3.11	110	.19	1.36	13.0	44	"	C.S.
58	Cargo light (No. 2 cargo hatch)	1	4.52	7	.91	4.09	24.0	2	"	Lead covered
59	Flex. cord for cargo light	1	3.11	110	.19	1.36	13.0	44	"	C.S.
60	Cargo light, No. 3 (cargo hatch)	1	4.52	7	.91	7.40	24.0	62	"	Lead covered
61	" " No. 2, 3 " "	1	2.08	1	1.63	4.54	12.9	58	"	L.C. & A.
62	" " " " " "	1	"	1	"	2.27	"	10	"	"
63	Flex. cord for cargo light	1	3.11	110	.19	1.36	13.0	44	"	C.S.
64	" " portable Li	1	1.13	40	"	0.136	5.0	44	"	"
65	Submain board S.3	1	9.45	7	1.30	18.76	37.0	116	"	Lead covered
66	Cargo light (No. 4 cargo hatch)	1	4.52	7	.91	7.40	24.0	60	"	"
67	" " " " " "	1	2.08	1	1.63	4.54	12.9	32	"	L.C. & A.
68	" " " " " "	1	"	1	"	2.27	"	20	"	"
69	Flex. cord for portable l.	1	1.13	40	.19	0.136	5.0	44	"	C.S.
70	Flex. cord for cargo light	1	3.11	110	"	1.36	13.0	44	"	"
71	Cargo light (No. 5 cargo hatch)	1	4.52	7	.91	4.09	24.0	2	"	Lead covered
72	Flex. cord for cargo light	1	3.11	110	.19	1.36	13.0	44	"	C.S.
73	Cargo light (No. 6 cargo hatch)	1	4.52	7	.91	7.27	24.0	2	"	Lead covered
74	" " (No. 5, 6 " ")	1	2.08	1	1.63	4.54	12.9	38	"	L.C. & A.
75	" " " " " "	1	"	1	"	2.27	"	2	"	"
76	Flex. cord for cargo light	1	3.11	110	.19	1.36	13.0	44	"	C.S.
77	Navigation light indicator	1	4.52	7	.91	0.92	24.0	46	"	Lead covered
78	Fore mast lamp	1	1.13	1	1.20	0.18	7.4	148	"	"
79	Stern mast lamp	1	"	1	"	"	"	36	"	"
80	Starboard side lamp	1	"	1	"	"	"	36	"	"
81	Port side lamp	1	"	1	"	"	"	178	"	"
82	Main mast lamp	1	14.25	1	1.63	35.40	46.0	188	"	"
83	Stern lamp	1	"	1	"	"	"	30	"	"
83	Submain board	1	14.25	7	1.63	35.40	46.0	30	"	"

L.C.A. ---- Lead covered & armoured.
 C.S. ---- Gabytre sheathed.

