

Rpt. 13.

No. 1955

REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office 3 MAY 1934

Date of writing Report 9th Apr. 1934 When handed in at Local Office 9th Apr. 1934 Port of NAGASAKI.

No. in Survey held at NAGASAKI. Date, First Survey 6th Dec. 33 Last Survey 29th March 1934.
Reg. Book. (Number of Visits 11)40819 on the Steel Single Screw Motor Vessel "NICHIO MARU". Tons { Gross 7508.86
in Sup. Net 5521.88

Built at Nagasaki. By whom built Mitsubishi Zosen Kaisha Yard No. 551 When built 1934

Owners Toyo Kisen Kabushiki Kaisha. Port belonging to Tokyo.

Electric Light Installation fitted by Mitsubishi Zosen Kaisha, Ltd. Contract No. / When fitted 1934

Is the Vessel fitted for carrying Petroleum in bulk /

System of Distribution Two wire system.

Pressure of supply for Lighting 225 volts, Heating / volts, Power 225 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, 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 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

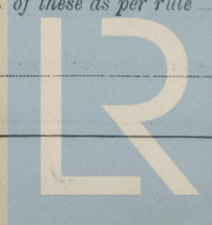
Main Switchgear, description of switchgear for each generator and each outgoing circuit, and arrangement of equalizer switches A double pole circuit breaker with over load trip time-leg device and reverse current trip and single pole equalizer switch interlocked with the circuit breaker as per rule and a double pole knife switch for each of 90 K.W. Generators: A double pole circuit breaker with over load trip, time-leg device or a double pole switch and fuse for each of out going circuits.

Instruments on main switchboard 5 ammeters 2 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 Lamp.

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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Lloyd's Register
Foundation

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Cables: Single, twin, concentric, or multicore Single or 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 8.296 volts for Power. 5.826 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 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 Clamped on perforated or unperforated steel plates by metal clips and protected by metal cover or steel pipes 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 box 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 the wireless telegraph, sectional area of which 0.0225 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 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 /

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 /

DESCRIPTION OF GENERATOR.	No. of	RATED AT				DRIVEN BY	WHERE DRIVEN BY AN INTERNAL COMBUSTION ENGINE.	
		Kilowatts.	Volts.	Amperes.	Rev. per Min.		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 K.V.A.	200	10	3000	D.C. Motor 220V. 17A 3000R/M.		
	1	100	2.5	3000		20V. 12A 3000 R/M.		

DESCRIPTION.	No. of Poles.	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.			
No. 2 Dynamo	1		.74350	91	.103	400	461	152	Rubber	Lead covered armoured
No. 1 Fuse board	1		.40640	61	.093	530	663	315	Paper	"
Windlass	1		.24650	37	"	220	244	136	Rubber	"
No. 4, 5 tons cargo winch	1		.11680	"	.064	129	188	64	"	"
No. 6, 3 ton motor	1		"	"	"	112	"	216	"	"
No. 2 Fuse board	1		.40640	61	.093	530	663	400	Paper	"
No. 8, 3 ton winch	1		.11680	37	.064	112	138	248	Rubber	"
No. 2, 5 ton	1		"	"	"	129	"	56	"	"
5 ton Mooring winch	1		"	"	"	112	"	210	"	"
Steering motor	1		.03960	19	.052	51	64	640	"	"
Ref. machine	1		.00701	7	.036	17	24	98	"	"
Switchboard Wirl. T.	1		.01462	7	.052	"	37	240	"	"
Motor 2 KVA Gen.	1		.00701	7	.036	"	24	96	"	Lead covered
2 KVA Gen. for Wl. T.	1		"	7	"	10	"	"	"	"
Motor for 2 KVA Gen.	1		"	7	"	19	"	"	"	"
2 KVA Gen. for Wl. T.	1		"	7	"	2.5	"	"	"	"
Battery for 2 KVA Gen.	1		.02214	7	.064	19	46	"	"	"
Jacket & Piston Cool. P.	1		.24650	37	.093	198	214	160	"	Lead covered armoured
Lub. oil pump	1		.03960	19	.052	58.5	64	104	"	"
F.O. transfer pump	1		.02214	7	.064	43.5	46	160	"	"
Fuse Box for Aux. M.	1		"	7	"	39.6	"	80	"	"
F.O. purifier	1		.00701	7	.036	12.5	24	190	"	"
F.O. service pump	1		"	7	"	7.5	"	145	"	"
Lub. oil shifting P.	1		"	7	"	"	"	64	"	"
Lub. oil purifier	1		"	7	"	12.5	"	96	"	"
Bilge & Gen. Sev. P.	1		.06000	19	.065	80	83	130	"	"
Bilge & Ballast P.	1		.11680	37	.064	105	130	145	"	"
Bilge pump	1		.03960	19	.052	50	64	185	"	"
Workshop motor	1		.00701	7	.036	22	24	130	"	"

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.			
Main Eng. Turn M.	1		.02214	7	.064	42	46	180	Rubber	"
Fresh water pump	1		.00701	"	.036	9	24	170	"	"
Submain board S. 1.	1		"	"	"	20.2	"	150	"	"
Dist. Bd. D. 1. PUMP	1		"	"	"	11.6	"	45	"	Lead covered
" D. 2. " " " "	1		"	"	"	8.6	"	10	"	"
" D. 3. PUMPS	1		"	"	"	11.8	"	80	"	Lead covered armoured
Eng. Rm. cargo lamp	1		.00181	1	.048	2.27	7.4	105	"	"
Flex. cord for " "	1		.0048	110	.0076	"	13	160	"	Hemp braided
Busbar lamp circuit	1		.00181	1	.048	1.54	7.4	76	"	Lead covered armoured
Dist. Bd. D. 4	1		.00701	7	.036	3.24	24	180	"	"
Neg. light main	1		"	"	"	1	"	210	"	"
Fore mast lamp	1		.00322	1	.064	0.18	12.9	470	"	"
Star. side lamp	1		"	1	"	"	"	144	"	"
Oil pump transfer pump	1		"	"	"	"	"	626	"	"
Main mast lamp	1		"	"	"	"	"	704	"	"
Stern lamp	1		"	"	"	"	"	"	"	"
Sub. board S. 2. circuit	1		.01462	7	.052	13.88	37	345	"	"
Cargo Lamp B. circuit	1		.00322	1	.064	7.4	12.9	64	"	"
Flex. cord for C. L.	1		.0048	110	.0076	2.27	13	160	"	Hemp braided
Cargo Lamp C. circuit	1		.00322	1	.064	3.27	12.9	192	"	Lead covered armoured
Flex. Cord for C. L.	1		.0048	110	.0076	1.1	13	160	"	Hemp braided
Submain board S. 3.	1		.01462	7	.052	13.88	37	380	"	Lead covered armoured
Cargo Lamp A. circuit	1		.00322	1	.064	3.27	12.9	192	"	"
Flex. cord for Cargo L.	1		.0048	110	.0076	1.1	13	160	"	Hemp braided
Cargo lamp C. circuit	1		.00322	1	.064	7.4	12.9	64	"	Lead covered armoured
Flex. cord for C. L.	1		.0048	110	.0076	2.27	13	160	"	Hemp braided

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.

for T. Inagaki
GENERAL MANAGER

Electrical Engineers. . . Date **APR 13 1934**

COMPASSES.

Distance between electric generators or motors and standard compass **40 feet from Motor-Generator for Wireless telegraph,**

Distance between electric generators or motors and steering compass **37 " " " " " " " "**

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 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 ZOSEN KAISHA, LTD.

for T. Inagaki
GENERAL MANAGER

Builder's Signature. Date **APR 13 1934**

Is this installation a duplicate of a previous case **Yes** If so, state name of vessel **"Uyo Maru" Nag.Rpt No.1916.**

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 conditions and found satisfactory.

Eligible in our opinion to have the notation of "Electric Light" and "Wireless" in Register Book.

Noted

May 5.5.34

Total Capacity of Generators **270** Kilowatts.

The amount of Fee ... £ **38-5-0** :

When applied for,

2. 4. 19. 34

Travelling Expenses (if any) £ :

When received.

24. 5. 34 *HD*

H.D. Buchanan / *T. Kimishu*
Surveyors to Lloyd's Register of Shipping.

Committee's Minute **TUE. 8 MAY 1934**

Assigned

Elec. Sh.