

REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Date of writing Report 5th Nov. 1934 When handed in at Local Office 5th Nov. 1934 Port of NAGASAKI.
 Received at London Office 26 NOV 1934

No. in Survey held at NAGASAKI. Date, First Survey 24th May 34 Last Survey 14th Oct. 1934
 Reg. Book. (Number of Visits 9)

82167 on the Steel Sangle Screw Motor Vessel "N O T O M A R U" Tons { Gross 7184.51
 Net 4317.76

Built at Nagasaki By whom built Mitsubishi Jukogyo K. Yard No. 580 When built 1934

Owners Nippon Yusen Kabushiki Kaisha. Port belonging to Tokio.

Electric Light Installation fitted by Mitsubishi Jukogyo Kaisha. Nag.Wks. Contract No. / When fitted 1934

Is the Vessel fitted for carrying Petroleum in bulk No.

System of Distribution Two wire system.

Pressure of supply for Lighting 220 volts, Heating / 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, Aux.Gen. excepted, 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 main engine room, floor level.

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 Near Forward bulkhead in main engine room at floor plate level.

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 knife switch and a double pole circuit breaker with overload release, reverse current trip and time lag device and a single pole equalizer switch interlocked with the circuit breaker as per rule

each of 250 K.W. Dynamos. A double pole knife switch and a double pole circuit breaker with overload release, reverse current trip and time lag device for aux. dynamo. A double pole knife switch and double pole fuse or double pole circuit breaker for each of out going circuits.

Instruments on main switchboard 8 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 with fuses and

Switches.

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

26 NOV 1934

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 10.22 volts for Power. 8.3 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 to perforated steel plates by metal clips and protected by metal covers 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 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 Lamps in stores are protected by strong metal guards, over heavy glass, airtight, 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 4 projectors, whether fixed or portable Fixed, 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
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 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	260	225	1155	340	Diesel engine	Diesel Oil	F.P. above 150°		
AUXILIARY ...	1	20	225	89	650	" "	" "	" " F.		
EMERGENCY ...	1	5 KVA	250	20	3000	D.C. Motor 7.5HP. 220V. 30A. 3000R/m.				
ROTARY ...	1	3 "	250	12	3000	" " 5HP. 220V. 20A. 3000R/m.				
TRANSFORMER	1	0.25KVA	100	2.5	3750	" " 0.45HP. 30V. 18A. 2750R/m.				
GENERATOR, LIGHTING AND HEATING CONDUCTORS.										
DESCRIPTION.	No. of 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 ...										
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 ...										

Steel Single Screw Motor Vessel "NOTO MARU".

Ref. No.	Description.	Conductors.		Composition of Strand		Total Maximum Current Amps.		Approximate Length in Meters	Insulated with	How Protected
		No. per Pole	Total Area sq/m.m.	No.	Dia.	In circuit	Rule.			
1	Turbo blower	3	1638.00	127	2.35	1420	1536	9	Rubber	L.C.B.
2	"	2	"	"	"	"	"	50	"	"
3	"	2	"	"	"	"	"	15.6	"	"
4	P & J. Cooling water pump	1	391.00	91	"	380	384	6	"	"
5	Sea water circulating pump	1	262.00	61	"	255	288	22.9	"	L.C.A.B.
6	Lub. oil pump	1	65.00	19	2.10	99	118	63	"	"
7	Fuel oil transfer pump	1	38.70	"	1.63	78	83	45	"	"
8	Eng. room ventilat fan	1	69.45	7	1.30	28	37	98	"	"
9	Ballast pump	1	65.00	19	2.10	102	118	56.2	"	"
10	Fire & G.S. pump	1	"	"	"	"	"	48.2	"	"
11	Cargo oil pump	1	"	"	"	"	"	62.4	"	"
12	Bilge & sanitary pump	1	9.45	7	1.30	31	37	60	"	"
13	Work shop motor	1	4.52	"	.91	12	24	46	"	"
14	M.E. Turning motor	1	25.60	19	1.30	59	64	66	"	"
15	Fuse box No.1	1	14.25	7	1.63	30.6	46	60	"	"
16	Lub. oil purifier	1	4.52	"	.91	15.3	24	12	"	"
17	Fuse box No.2	1	9.45	"	1.30	28.6	37	52	"	"
18	Lub. oil shifting pump	1	4.52	"	.91	14.3	24	14	"	"
19	Fuse box No.3	1	9.45	"	1.30	28.6	37	52	"	"
20	Fresh water pump	1	4.52	"	.91	14.3	24	24	"	"
21	Travelling crane & Hoist	1	25.60	19	1.30	51	64	18	"	"
22	Oil burning unit	1	9.45	7	"	23	37	88	"	"
23	Main dynamo	2	1340.00	127	2.60	1155	1190	51.6	"	L.C.B.
24	Auxiliary dynamo	1	65.00	19	2.10	89	118	51.4	"	L.C.A.B.
25	No.1 Fuse board	1	321.00	61	2.60	666	804	68	Paper	"
26	Windlass main	1	391.00	91	2.35	332	499	52	Rubber	"
27	Windlass motor	1	262.00	61	"	307	357	24	"	"
28	Windlass motor generator (M.G.)	1	127.00	37	2.10	186	204	14	"	"
		1	262.00	61	2.35	307	357	14	"	"
29	5 ton cargo winch	1	159.00	37	"	222	244	18	"	"
30	No.2 Fuse board	2	524.00	61	"	1251	1326	96	Paper	"
31	3 ton cargo winch	1	75.30	37	1.83	130	138	64	Rubber	"
32	No.3 Fuse board	2	390.00	"	2.60	918	1046	96	Paper	"
33	3 ton cargo winch	1	75.30	"	1.63	130	138	22	Rubber	"
34	No.4 fuse board	1	262.00	61	2.35	528	663	60	Paper	"
35	5 ton cargo winch	1	159.00	37	"	222	244	18	Rubber	"
36	3 " " "	1	75.00	"	1.63	130	138	20	"	"
37	Mooring winch	1	159.00	"	2.35	222	244	62	"	"
38	" " "	1	"	"	"	"	"	12	"	"
39	Steering motor	1	38.70	19	1.63	66	83	6	"	"
40	Steering motor generator	1	49.00	"	1.85	89	97	6	"	"
41	" " "	1	"	"	"	"	"	52	"	"
42	" " "	1	38.70	"	1.63	66	83	142	"	"
43	" " "	1	49.00	"	1.85	89	97	"	"	"
44	Steering motor	1	38.70	"	1.63	66	83	8	"	"
		1	49.00	"	1.85	89	97	"	"	"
45	Motor-Gen. Helm indicator.	1	4.52	7	.91	1.25	24	64	"	"
46	Aux. switch board	1	321.00	61	2.60	295.2	332	40	"	"
47	Refrigerating Compressor	1	65.00	19	2.10	104.5	118	22	"	"
48	Brine pump	1	4.52	7	.91	22.7	24	18	"	"
49	Cool. water circulat. pump	1	"	"	"	20.4	"	38	"	"
50	Fuse box No.4	1	14.25	"	1.63	45	46	48	"	"
51	Ordinance fan	1	9.45	"	1.30	31.8	37	2	"	"
52	" " "	1	"	"	"	"	"	78	"	"
53	" " "	1	4.52	"	.91	13.2	24	144	"	"
54	" " "	1	"	"	"	"	"	4	"	"
55	Fuse box No.5	1	9.45	"	1.30	26	37	90	"	"
56	Cooking blower	1	4.52	"	.91	4.7	24	24	"	"
57	Tofu machine	1	"	"	"	3.2	"	12	"	"
58	Electric toaster	1	"	"	"	9	"	10	"	"
59	" " "	1	"	"	"	"	"	46	"	"
60	Fuse box No.6	1	"	"	"	8.45	"	4	"	"
61	Sounding machine	1	"	"	"	7.25	"	190	"	"
62	" " "	1	"	"	"	"	"	2	"	"
63	Fire detector Exhaust fan	1	"	"	"	0.6	"	70	"	"
64	" " " "	1	"	"	"	"	"	10	"	L.C.B.
65	" " " "	1	"	"	"	"	"	12	"	"
66	Wireless telegraph	1	25.60	19	1.30	30	64	88	"	L.C.A.B.
67	5 KVA Motor-generator for wireless telegraph	1	9.45	7	"	"	37	38	"	"
		1	4.52	7	.91	20	24	38	"	"
68	3 KVA. " "	1	"	"	"	"	"	"	"	"
		1	"	"	"	12	"	"	"	"
69	1/4 KVA " "	1	"	"	"	2.5	"	"	"	"
70	Battery for Wireless Tel.	1	9.45	"	1.30	18	37	20	"	"
71	Submain board S.1.	1	25.60	19	"	41.17	64	64	"	"
72	Distributing board 1.	1	4.52	7	.91	8.22	24	16	"	L.C.
73	" " 2	1	"	"	"	7.22	"	3	"	"
74	" " 3	1	"	"	"	9.1	"	3	"	"
75	" " 4	1	"	"	"	7.54	"	30	"	"
76	" " 5	1	"	"	"	9.09	"	3	"	"
77	Submain board S.2.	1	"	"	"	10.23	"	74	"	L.C.A.B.
78	Distributing board 6	1	"	"	"	4.5	"	3	"	L.C.
	" " 7	1	"	"	"	5.73	"	3	"	"
79	Submain board S.3.	1	14.25	"	1.63	22.7	46	22	"	L.C.A.B.
80	Distributing board 8	1	4.52	"	.91	12.7	24	3	"	"
81	" " 9	1	"	"	"	10	"	3	"	"
82	Bus bar light in Eng. Rm.	1	1.13	1	1.20	2.63	7	22	"	"
83	Navigation light	1	4.25	7	.91	0.98	24	75	"	"
84	Fore mast light	1	1.13	1	1.20	0.18	7	198	"	"

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.
General Manager. Electrical Engineers. Date

COMPASSES.

Distance between electric generators or motors and standard compass 13 meters from winch motor on bridge deck.
Distance between electric generators or motors and steering compass 11 " " " " " " " "

The nearest cables to the compasses are as follows :-

A cable carrying 0.06 Ampères 0.3 meter from standard compass 0.3 meter 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.
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.)

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 lights & Wireless" in the Register Book.

Plans sent under separate cover of:- "Wiring diagram of Power and Lighting & Cabin Fan".

Total Capacity of Generators 800 Kilowatts.

The amount of Fee £ 51-10-0 : 24. 10. 34
When applied for, 24. 10. 34
When received, 27. 12. 34
Travelling Expenses (if any) £ :
Surveyor to Lloyd's Register of Shipping.

Committee's Minute TUE. 18 DEC 1934

Assigned Dec. 26. 1934

2m. 31. - Transfer
The Surveyors are requested not to write on or below the space for Committee's Minute.

35	Starboard side lamp	1	1.13	1	1.20	0.18	7	42	Rubber	L.C.A.B.
36	Port side lamp	1	"	1	"	"	"	49	"	"
37	Main mast lamp	1	"	1	"	"	"	224	"	"
38	Stern lamp	1	"	1	"	"	"	232	"	"
39	Submain board S.4	1	4.52	7	.91	16.67	24	95	"	"
90	Cargo light & Cluster	1	1.13	1	1.20	6.7	7	1	"	"
91	Flex.cord for cargo lampt	1	3.11	110	.19	3.4	13	50	"	C.S.
92	" " " Cargo cluster	1	"	110	"	1.09	"	"	"	"
93	Cargo cluster	1	1.13	1	1.20	3.27	7	40	"	L.C.A.B.
94	Flex.cord for cargo cluster	1	3.11	110	.19	1.09	13	50	"	C.S.
95	Submain board S.5	1	4.52	7	.91	16.67	24	95	"	L.C.A.B.
96	Cargo light & cluster	1	1.13	1	1.20	6.7	7	1	"	"
97	Flex.cord for cargo lamp	1	3.11	110	.19	3.4	13	50	"	C.S.
98	Flex.cord for cargo cluster	1	"	"	"	1.09	13	50	"	"
99	Cargo light	1	1.13	1	1.20	3.27	7	40	"	L.C.A.B.
00	Flex.cord for cargo cluster	1	3.11	110	.19	1.09	13	50	"	C.S.
01	Distributing board 10	1	4.52	7	.91	8.9	24	68	"	L.C.A.B.

Note:- L.C.B. - Lead covered & braided.
 L.C.A.B. - Lead covered, armoured & braided.
 L.C. - Lead covered.
 C.S. - Cab.tyre sheathed. 406



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