

# REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office FEB 14 1938

Date of writing Report 12th Jan 1938 When handed in at Local Office 12th Jan 1938 Port of NAGASAKI.

No. in Survey held at NAGASAKI. Date, First Survey 21st October Last Survey 23rd Dec. 1937  
Reg. Book. (Number of Visits 8)

37125 on the Single Screw Motor Vessel "AWATA MARU" Tons { Gross 7,398.  
Net 4,328.

Built at Nagasaki By whom built Mitsubishi J.K.K. Yard No. 688 When built 1937

Owners Nippon Yusen Kabushiki Kaisha. Port belonging to Tokyo.

Electric Light Installation fitted by Mitsubishi Jukogyo K.K. Nagasaki, Contract No. - When fitted 1937

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 (Excepted Aux.G) 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.

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 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 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

for each of 220 KW Main Dynamo, A d.p. knife switch and a d.p. circuit breaker with overload

release, reverse current trip & time lag device for aux. dynamo, and d.p. knife switch and d.p.

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

Handwritten signature and date: 16-2-38

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 11.16 volts for Power, 5.61 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 underforated 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 Yes, are the cap screws of brass Yes, are the cables run in separate grooves Yes. 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 for the wireless telegraph, sectional area of which is 25,60 square millimetre.

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 Yes

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, 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 Yes

how are the cables led Yes

where are the controlling switches situated Yes

Searchlight Lamps, No. of 4 projectors, whether fixed or portable Portable, are their fittings as per Rule Yes (1 Suga canal type searchlight)

Arc Lamps, other than searchlight lamps, No. of 1, are their live parts insulated from the frame or case Yes, are their fittings as per Rule Yes

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 Yes, if not of this type, state distance of the combustible material horizontally or vertically above the motors Yes and Yes

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 Yes

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 Yes

If portable lamps for use in dangerous spaces are supplied, are they of a type approved by the Home Office Yes

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	220	225	978	360	Diesel engine	Diesel oil	above 150° F
AUXILIARY	1	30	225	153	650	" "	" "	" "
EMERGENCY								
ROTARY TRANSFORMER	2	5 KVA	250	20	2400	DC Motor 8 HP 220V. 33A. 2400rpm.		
	1	1/2 "	100	2.5	3333	DC Motor 0.45 HP. 20V. 18A. 3533 rpm.		

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										

**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.			
P & J Cooling Water Pump	1	480.00	91	2.60	410	461.0	60	Rubber	L.C & B.
Sea water circulating pump	1	321.00	61	"	302	332.0	30	"	L.C.A & B.
Lubricating oil pump	1	65.00	19	2.10	109	118.0	80	"	"
Fuel oil transfer pump	1	38.70	"	1.63	78	83.0	65	"	"
Engine room vent. fan	1	9.45	7	1.30	27.5	37.0	12	"	"
"	1	"	"	"	"	"	95	"	"
Bilge & ballast pump	1	65.00	19	2.10	102	118.0	68	"	"
Fire & Gen. service pump	1	"	"	"	"	"	66	"	"
Cargo oil pump	1	"	"	"	"	"	72	"	"
Bilge pump	1	9.45	7	1.30	31	37.0	60	"	"
Work shop motor	1	4.52	7	0.91	11.2	24.0	68	"	"
Main engine turning motor	1	25.60	19	1.30	59	64.0	90	"	"
No.1 fuse box	1	14.25	7	1.63	22.07	46.0	60	"	"
Lub. oil purifier	1	4.52	7	0.91	12.97	24.0	10	"	"
Fuel oil purifier	1	"	7	"	9.1	"	18	"	"
No.2 fuse box	1	9.45	7	1.30	28	37.0	60	"	"
Fuel oil service pump	1	4.52	7	0.91	14	24.0	20	"	"
No.3 fuse box	1	9.45	7	1.30	29.6	37.0	60	"	"
Fresh water pump	1	4.52	7	0.91	14.8	24.0	34	"	"
Boiler tube cleaner	1	"	7	"	9	"	20	"	"
Hoist & travelling crane	1	14.25	7	1.63	40	46.0	28	"	"
Main dynamo	2	1092.00	127	2.35	978	1024.0	58	"	L.C & B.
Auxiliary dynamo	1	96.40	37	1.85	133	152.0	58	"	L.C.A & B.
No.1 fuse board	1	262.0	61	2.35	657	663.0	78	Paper	"
Windlass. Main.	1	391.0	91	"	378.6	399.0	28	Rubber	"
" Motor.	1	262.0	61	"	340	367.0	12	"	"
" M-G. (Motor)	1	195.0	37	2.60	185	283.0	10	"	"
" (Gen).	1	262.0	61	2.35	340	357.0	10	"	"
5 ton cargo winch	1	159.0	37	"	222	244.0	16	"	"
No.2 fuse board	1	524.0	61	"	1232	1326.0	90	Paper	"
3 ton cargo winch	1	75.30	37	1.63	130	138.0	64	Rubber	"
No.3 fuse board	2	318.00	37	2.35	903	906.0	100	Paper	"
3 ton cargo winch	1	75.30	37	1.63	130	138.0	22	Rubber	"
No.4 fuse board	1	195.0	"	2.60	520	523.0	68	Paper	"
5 ton cargo winch	1	159.0	"	2.35	222	244.0	16	Rubber	"
3 ton cargo winch	1	75.30	"	1.63	130	138.0	16	"	"
Mooring winch	1	159.00	"	2.35	222	244.0	14	"	"
"	1	"	"	"	"	"	64	"	"
Steering motor	1	65.00	19	2.10	100	124.0	4	"	"
" Motor-Gen.	1	75.30	37	1.63	132	138.0	8	"	"
"	1	65.00	19	2.10	100	124.0	154	"	"
"	1	75.30	37	1.63	132	138.0	42	"	"
"	1	"	"	"	"	"	154	"	"
" Motor	1	65.0	19	2.10	100	124.0	14	"	"
"	1	75.0	37	1.63	132	138.0	14	"	"
Met-Gen. for Helm indicator	1	4.52	7	0.91	1.33	24.0	10	"	"
Aux. switchboard	1	321.00	61	2.60	295.2	333.0	50	"	"
Ref. Compressor	1	65.00	19	2.10	104.5	118.0	12	"	"
Brine Pump	1	4.52	7	0.91	22.7	24.0	20	"	"
Cooling water circ. pump.	1	"	7	"	20.4	"	14	"	"
No.4 fuse box	1	38.70	19	1.63	76	83.0	42	"	"
Ordnance fan	1	4.52	7	0.91	18.5	24.0	4	"	"
"	1	"	7	"	"	"	70	"	"
"	1	"	7	"	20.6	"	37	"	"
"	1	"	7	"	"	"	84	"	"
"	1	"	7	"	9.2	"	6	"	"
"	1	"	7	"	"	"	180	"	"
No.5 fuse box	1	9.45	7	1.30	27.28	37.0	88	"	"
Cooking blower	1	4.52	7	0.91	5.7	24.0	10	"	"
Tefu machine	1	"	7	"	3.4	"	8	"	"
Electric toaster	1	"	7	"	9.09	"	16	"	"
"	1	"	7	"	"	"	48	"	"
No.6 fuse board	1	"	7	"	3	"	13	"	"
No.7 "	1	"	7	"	2.9	"	76	"	"
Fire detect exhaust fan	1	"	7	"	0.6	"	8	"	"
"	1	1.13	1	1.20	"	7.0	16	"	L.C & B.
Wireless telegraph	1	38.7	19	1.63	33	83.0	80	"	L.C.A & B.
5 KVA M-G for W.Tel.	1	9.45	7	1.30	"	37.0	40	"	"
"	1	4.52	7	0.91	20	24.0	40	"	"
1/2 KVA "	1	"	7	"	18	"	40	"	"
"	1	2.08	1	1.63	2.5	12.9	40	"	"
Battery for W.Tel.	1	9.45	7	1.30	18	37.0	12	"	"
Gyre compass	1	4.52	7	0.91	6	24.0	60	"	"
" Motor	1	2.08	1	1.63	5	12.9	6	"	"
" A.C. Gen.	1	"	1	"	3	"	6	"	"
" D.C. Gen.	1	4.16	1	"	10	25.8	6	"	"
Battery for Gyre Comp.	1	4.52	7	0.91	10	24.0	10	"	"
Submain board S.1.	1	25.60	19	1.30	48.29	64.0	60	"	"
Distribut board D.1.	1	4.52	7	0.91	9.52	24.0	20	"	L.C.
" 2.	1	"	7	"	7.30	"	2	"	"
" 3.	1	"	7	"	10.02	"	2	"	"
" 4	11	"	7	"	9.22	"	24	"	"
" 5	1	"	7	"	12.23	"	2	"	"
Submain board S.2.	1	"	7	"	9.16	"	40	"	L.C.A & B.
Dist. board D.6	1	"	7	"	4.87	"	2	"	L.C.
" 7	1	"	7	"	4.29	"	2	"	"
Submain board S 3	1	"	7	1.63	30.3	46.0	10	"	L.C.A.B.
Dist board D.8	1	"	7	0.91	11.71	24.0	2	"	L.C.
" 9	1	"	7	"	13.15	"	2	"	"
Bus-bar light in Eng. Rm.	1	1.13	1	1.20	2.09	7.0	14	"	L.C.A & B.
Submain board N 4	1	9.45	7	1.30	16.9	37.0	142	"	"

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.

*K. Tama* Electrical Engineers. Date \_\_\_\_\_  
GENERAL MANAGER.

**COMPASSES.**

Distance between electric generators or motors and standard compass **5 metres from 1/8 HP Fire detector exhaust fan motor.**

Distance between electric generators or motors and steering compass **7 " " " " " " " " " " " "**

The nearest cables to the compasses are as follows :-

A cable carrying **0.06** Ampères **0.3 metre** feet from standard compass **0.3 metre** 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.

*K. Tama* Builder's Signature. Date \_\_\_\_\_  
GENERAL MANAGER.

Is this installation a duplicate of a previous case **Yes** If so, state name of vessel **"Asaka Maru"**

General Remarks (State quality of workmanship, opinions as to class, etc.)

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.

*Noted.*  
*16-2-38.*

Total Capacity of Generators **690** Kilowatts.

The amount of Fee ... £ **62-5-0** : When applied for, **27-12-37**

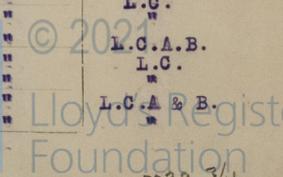
Travelling Expenses (if any) £ : When received, **23-2-38**

*H. Buchanan & T. Kemmish*  
Surveyors to Lloyd's Register of Shipping.

Committee's Minute **FRI. 18 FEB 1938**

Assigned *See other F. B. report*

The Surveyors are requested not to write on or below the space for Committee's Minute.



Cargo light & cluster	1	2.08	1	1.63	6.68	12.9	2	Rubber	L.C.A & B.
Flex.cord for cargo light	1	3.11	110	0.91	3.41	13.0	60	"	C.T & S.
" " " " cluster	1	"	"	"	1.09	"	50	"	"
Cargo cluster & portable L.	1	2.08	1	1.63	3.54	12.9	2	"	L.C.A.B.
Flex.cord for Portable L.	1	1.13	40	0.19	0.14	5.0	20	"	C.T.S.
Submain board S 5	1	9.45	7	1.30	16.9	37.0	140	"	L.C.A.B.
Cargo light & cluster.	1	2.02	111	1.63	6.68	12.9	2	"	"
Flex.cord for cargo light	1	3.11	110	0.19	3.41	13.0	50	"	C.T.S.
" " " " cluster	1	"	"	"	1.09	"	50	"	"
Cargo cluster & portable L.	1	2.08	41	1.63	3.54	12.9	2	"	L.C.A.B.
Flex.cord for Portable L.	1	1.13	40	0.19	0.14	5.0	20	"	C.T.S.
Navigation light	1	4.52	7	0.91	0.97	24.0	70	"	L.C.A.B.
Fore mast lamp	1	1.13	1	1.20	0.18	7.0	186	"	"
Starb.side lamp	1	"	1	"	"	"	40	"	"
Portside lamp	1	"	1	"	"	"	38	"	"
Main mast lamp	1	"	1	"	"	"	210	"	"
Stern lamp	1	"	1	"	"	"	212	"	"
Sun canal type searchlight	1	38.7	19	1.63	60	83.0	190	"	"
Dist.board D.10	1	4.52	7	0.91	9.18	24.0	60	"	"

Note:- L.C.A & B. - Lead covered, armoured & braided.  
 L.C & B. - " " & braided.  
 C.T .S. - Cab.type sheathed.

*NOT*