

# REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office

28 JUN 1952

Date of writing Report 2 June 1952 When handed in at Local Office 19 Port of Kobe, Japan  
 No. in Survey held at Kobe, Japan Date, First Survey 29th Oct. 1951 Last Survey 28th Jan. 1952  
 eg. Book. (No. of Visits 15)  
16332 on the Single Screw Steel Vessel, M.T. "SEIHO MARU" Tons { Gross 13064.82  
 Net 9368.29

Built at Kobe, Japan By whom built Kawasaki Dockyard Co. Ltd Yard No. 912 When built Jan. 1952

Owners Sino Kaikan Co. Ltd. Port belonging to Tokyo

Installation fitted by Kawasaki Dockyard Co. Ltd. When fitted Jan. 1952

Is vessel equipped for carrying Petroleum in bulk Yes Is vessel equipped with D.F. Yes E.S.D. Yes G.Y.C. Yes Sub.Sig. None Radar Yes

Plans, have they been submitted and approved Yes System of Distribution 2 wire system Voltage of Lighting 110 V

Heating 220 V Power 220 V D.C. or A.C., Lighting A.C. Power D.C. If A.C. state frequency 60 A

Prime Movers, has the governing been found as per Rule when full load is thrown on and off Yes Are turbine emergency governors fitted with a trip switch --- Generators, are they compound wound Yes, and level compounded under working conditions Yes

if not compound wound state distance between generators --- and from switchboard --- Are the generators arranged to run in parallel Yes, are shunt field regulators provided Yes Is the compound winding connected to the negative or positive pole

Negative Have machines over 100 kw. been inspected by the Surveyors during manufacture and testing Yes Have certificates of

test for machines under 100 kw. been supplied Yes and the results found as per Rule Yes

Position of Generators Frame No 45 portside in engine room floor

is the ventilation in way of generators satisfactory Yes are they clear of inflammable material and protected from mechanical injury and

damage from water, steam and oil Yes Switchboards, where are main switchboards placed In the neighbourhood of,

the frame No 37, portside 2nd deck in engine room

are they in accessible positions, free from inflammable gases and acid fumes and protected from mechanical injury and damage from water,

steam and oil Yes, what insulation is used for the panels Synthetic resin (Phenolic resin) if of synthetic insulating

material is it an Approved Type Yes, if of semi-insulating material (slate or marble) are all conducting parts insulated therefrom as

per Rule --- Is the construction as per Rule, including locking of screws and nuts Yes Description of Main Switchgear

for each generator and arrangement of equaliser switches A triple pole linked air circuit breaker (two poles for main)

with overload reverse current trips, arranged with equalizer circuit being closed before

main circuits and opened after main circuits, and a triple pole linked switch

and the switch and fuse gear (or circuit breakers) for each outgoing circuit Generally double pole linked switch with

a fuse on each pole is used for each outgoing circuit, and double pole linked air circuit

breakers with overload trips for steering gear circuits and for circuits above 200 A

Are compartments containing switchboards composed of fire-resisting material or lined as per Rule Yes Instruments on main switchboard 8

ammeters 3 voltmeters --- synchronising devices. For compound machines in parallel are the ammeters and reversed current

protection devices connected on the pole opposite to the equaliser connection Yes Earth Testing, state means provided 2- earth

lamps with metal filament

Switches, Circuit Breakers and Fuses, are they as per Rule Yes, are the fuses an Approved Type Yes

make of fuses Fuji Electric Co. Ltd., are all fuses labelled Yes If circuit breakers are provided for the generators, at what

overload do they operate 150%, and at what current do the reversed current protective devices operate 150 A

Joint Boxes, Section Boards and Distribution Boards, is the construction as per Rule Yes

Cables, are they insulated and protected as per Rule Yes, if otherwise than as per Rule are they of an Approved Type ---

state maximum fall of pressure between bus bars and any point under maximum load 7 V for power Are the ends of all cables having a sectional

area of 0.01 square inch and above provided with soldering sockets Yes Are all paper insulated and varnished cambric insulated

cables sealed at the ends Yes Are all the cable runs in accessible positions, not exposed to drip or accumulation of water or oil,

high temperatures or risk of mechanical damage Yes, are any cables laid under machines or floorplates Yes, if so, are they

adequately protected Yes Are cables in machinery spaces, galleys, laundries, etc., lead covered Yes or run in conduit Yes partially

or of the "HR" type --- State how the cables are supported or protected Generally supported by metal clips and

protected by lead alloy sheath with armouring. In engine room, carried on galvanized

perforated plating; where exposed to mechanical damage protected by strong sheet iron

plating; in engine room floorplates in conduits

Are all lead sheaths, armouring and conduits effectually bonded and earthed Yes Are all cables passing through decks and watertight

bulkheads provided with deck tubes or watertight glands Yes, where unarmoured cables pass through beams, etc., are the holes

effectively bushed --- Refrigerated chambers, are the cables and fittings as per Rule Yes



Alternative Lighting, are the groups of lights in the engine and boiler rooms arranged as per Rule. Yes Emergency Supply, state position In the neighbourhood of the frame No. 37 portside 2nd deck in engine room.

Navigation Lamps, are they separately wired. Yes controlled by separate double pole switches and fuses. Yes Are the switches and fuses in a position accessible only to the officers on watch. Yes, is an automatic indicator fitted. Yes Is an alternative supply provided. Yes

Secondary Batteries, are they constructed and fitted as per Rule. Yes, are they adequately ventilated. Yes state battery capacity in ampère hours. 2 x 24 Volts x 144 A.H.

Fittings, are all fittings on weather decks, in stokeholds and engine rooms and wherever exposed to drip or condensed moisture, weatherproof. Yes Are any fittings installed where readily combustible materials or inflammable or explosive dust or gases are likely to be present. yes if so, how are they protected. --- and where are the controlling switches fitted. --- Are all fittings suitably ventilated. Yes

Searchlight Lamps, No. of 9, whether fixed or portable. fixed, are they of the carbon arc or of the filament type. filament type

Heating and Cooking, is the general construction as per Rule. Yes, are the frames effectually earthed. Yes, are heaters in the accommodation of the convection type. Yes Motors, are all motors constructed and installed as per Rule and placed in well-ventilated compartments in which inflammable gases cannot accumulate and protected from damage from water, steam and oil. Yes

Are motors coupled to oil fuel transfer and pressure pumps capable of being stopped from a position accessible in the event of fire in the pump compartment. Yes Have motors of 100 BHP and over been inspected by the Surveyors during manufacture and testing. Yes

Have certificates of test for motors under 100 BHP intended for essential sea services been supplied and the results found as per Rule. Yes

Control Gear and Resistances, are they constructed and fitted as per Rule. Yes Lightning Conductors, where required are they fitted as per Rule. --- Ships carrying Oil having a Flash Point less than 150° F. Have all the special requirements of the Rules for such ships been complied with. Yes, are all fuses of an Approved Cartridge Type. Yes, make of fuse. Fuji Electric Co Ltd Are the fittings for pump rooms, 'tween deck spaces, etc., in accordance with the special requirements for such ships. Yes Are the cables lead covered as per Rule. Yes

E.S.D., if fitted state maker. Nippon Electric Co location of transmitter. Bottom Frame No. 94 and receiver. Bottom Frame No. 94

Spare Gear, if the vessel is for open sea service have spares been provided as per Rule and suitably stored in dry situations. Yes

Insulation Tests, has the insulation resistance of all circuits and apparatus been tested and found satisfactory. Yes

#### PARTICULARS OF GENERATING PLANT.

DESCRIPTION OF GENERATOR.	No. of	MAKER.	RATED AT				PRIME MOVER.	
			Kilowatts per Generator.	Volts.	Ampères.	Revs. per Min.	TYPE.	MAKER.
MAIN GENERATOR	2	Kawasaki Dockyard Co Ltd	250 KW	230 V	1087 A	375 1/2	Diesel	Kawasaki Dockyard Co Ltd
EMERGENCY ...	1	Kawasaki Dockyard	40 KW	230 V	174 A	600 1/2	Diesel	East Japan Heavy Industry Co Ltd
ROTARY TRANSFORMER	2	Kawasaki Dockyard	30 KVA	115 V	150 A	1800 1/2	Motor	Kawasaki Dockyard Co Ltd

#### GENERATOR CABLES.

DESCRIPTION.	KILOWATTS.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (lead plus return feet).	INSULATION.	PROTECTIVE COVERING.
		No. in Parallel per Pole.	Sectional Area or No. and Dia. of Strands. Sq. ins. or sq. mm.	In the Circuit.	Rule.			
MAIN GENERATOR ... No. 1	250 KW	2	1.0	1087	595 x 2	60	Rubber	Lead covered and steel armoured
" " EQUALISER ...		1	1.0		595		"	"
" " No. 2	250 KW	2	1.0	1087	595 x 2	50	"	"
" " Equaliser		1	1.0		595		"	"
Rotary Transformer : Motor No. 1	40 HP	1	0.15	150	152	60	"	"
" " Generator No. 1	30 KVA	1	0.4	150	202	30	"	"
EMERGENCY GENERATOR ...	40 KW	1	0.3	174	240	80	"	"
ROTARY TRANSFORMER : MOTOR No. 2	40 HP	1	0.15	150	152	60	"	"
" " GENERATOR ... No. 2	30 KVA	1	0.4	150	202	30	"	"

#### MAIN DISTRIBUTION CABLES (to Section Boards, Distribution Fuse Boards, etc.).

DESCRIPTION.								
AS-1	From Main Switchboard to -							
AS-2	Emergency Switchboard	2	1.0	1000	595 x 2	90	Rubber	Lead covered and steel armoured
SC-1	"	1	1.0	560	595	90	"	"
SC-3	Shore Connection Box 220 V	1	0.3	200	240	180	"	"
PD-1	" 115 V	1	0.4 (3 pole)	200	202	90	"	"
PD-3	Power Distribution Box PD-1	1	0.1	80	118	420	"	"
PD-5	" PD-3	1	0.01	26	31	210	"	"
M-65	" PD-5	1	0.0045	10	15	240	"	"
PD-7	" M-65	1	0.0045	10	15	240	"	"
PD-9	" PD-7	1	0.0145	10	37	600	"	"
LD-1	" PD-9	1	0.007	10	24	120	"	"
	Lighting Section Box (Bridge Deck)	1	0.0225 (3 pole)	28	32	600	"	"

#### MAIN DISTRIBUTION CABLES (to Section Boards, Distribution Fuse Boards, etc.).

DESCRIPTION.								
LD-3	From Main Switchboard to -							
LD-5	Lighting Section Box (Upper Deck)	1	0.03 (3 pole)	34	37	120	Rubber	Lead covered and steel armoured
LD-7	" (Prop. Deck P.S.)	1	0.0225 (3 pole)	23	32	600	"	"
LD-9	" (Prop. Deck P.S.)	1	0.0225 (3 pole)	16	32	150	"	"
LD-11	" (Engine Room Upper)	1	0.0225 (3 pole)	24	32	180	"	"
	" (Engine Room Lower)	1	0.0225 (3 pole)	23	32	180	"	"



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LIGHTING, HEATING, WIRELESS, NAVIGATION LIGHTS, ETC., CABLES.

DESCRIPTION.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (lead plus return feet).	INSULATION.	PROTECTIVE COVERING.
	No. in Parallel per Pole.	Sectional Area or No. and Dia. of Strands. Sq. ins. or sq. mm.	In the Circuit.	Rule.			
From Lighting Section Box LD-1 to -							
Lighting Distribution Box for							
Navigation Bridge Deck Lighting	1	0.01 (3pole)	5	22	70	Rubber	Lead covered and steel armoured
Boat Deck Lighting	1	0.01 (3pole)	10	22	70	"	"
Bridge Deck Lighting	1	0.01 (3pole)	13	22	70	"	"
From Lighting Section Box LD-3 to -							
Lighting Distribution Box for							
Upper Deck Portside Lighting	1	0.007 (3pole)	8	17	90	"	"
Upper Deck Starboard Lighting	1	0.007 (3pole)	10	17	90	"	"
Pop Deck Portside Lighting	1	0.007 (3pole)	8	17	90	"	"
Pop Deck Starboard Lighting	1	0.007 (3pole)	8	17	90	"	"
From Lighting Section Box LD-5 to -							
Lighting Distribution Box for							
Pop Deck Portside Lighting	1	0.01 (3pole)	10	22	90	"	"
Pop Deck Starboard Lighting	1	0.01 (3pole)	10	22	90	"	"
From Lighting Section Box LD-7 to -							
Lighting Distribution Box for							
Pop Deck Fore Portside Lighting	1	0.007 (3pole)	5	17	90	"	"
Pop Deck After Portside Lighting	1	0.007 (3pole)	8	17	90	"	"
Pop Deck Starboard Lighting	1	0.007 (3pole)	3	17	90	"	"
From Lighting Section Box LD-9 to -							
Lighting Distribution Box for							
Engine Room Upper Starboard Lighting	1	0.007 (3pole)	12	17	80	"	"
Engine Room Upper Portside Lighting	1	0.01 (3pole)	12	22	80	"	"
From Lighting Section Box LD-11 to -							
Lighting Distribution Box for							
Engine Room Lower Starboard Lighting	1	0.01 (3pole)	12	22	80	"	"

MOTOR CABLES.

ALL IMPORTANT MOTORS TO BE ENUMERATED.	No.	B.H.P.							
From Main Switchboard to -									
Steering Gear Motor No. 1	1	15	1	0.04	59	64	360	Rubber	Lead covered and steel armoured
" No. 2	1	15	1	0.04	59	64	360	"	"
"	1	15	1	0.04	59	64	400	"	"
"	1	15	1	0.04	59	64	400	"	"
Cooling Water Pump No. 1	1	140	2	0.4	530	288x2	160	"	"
" No. 2	1	140	2	0.4	530	288x2	200	"	"
Fire and Bilge Pump	1	35	1	0.15	133	152	200	"	"
General Service Pump	1	35	1	0.15	133	152	200	"	"
Lubricating Oil Pump No. 1	1	30	1	0.1	115	118	200	"	"
" No. 2	1	30	1	0.1	115	118	200	"	"
Harbour use Cooling Water Pump	1	15	1	0.04	59	64	200	"	"
Fuel Oil Transfer Pump No. 1	1	7.5	1	0.01	31	31	160	"	"
" No. 2	1	7	1	0.01	31	31	160	"	"
Fuel Oil Purifier No. 1	1	6.5	1	0.01	27	31	60	"	"
" No. 2	1	6.5	1	0.01	27	31	60	"	"
Fuel Oil Clarifier	1	6.5	1	0.01	27	31	60	"	"
Exhaust Gas Boiler Circulating Pump No. 1	1	5	1	0.01	21	31	280	"	"
" No. 2	1	5	1	0.01	21	31	280	"	"
Fuel Valve Cooling Water Pump	1	2	1	0.003	9	10	110	"	"
Lubricating Oil Service Pump	1	3	1	0.0045	13	15	230	"	"
Turning Motor	1	15	1	0.03	56	56	230	"	"
Lubricating Oil Purifier No. 1	1	3	1	0.0045	13	15	235	"	"
" No. 2	1	3	1	0.0045	13	15	235	"	"
Sanitary Pump	1	7.5	1	0.0145	31	37	210	"	"
Ventilating Fan No. 1	1	5	1	0.007	21	24	120	"	"
" No. 2	1	5	1	0.007	21	24	120	"	"
" No. 3	1	5	1	0.007	21	24	180	"	"
Universal Machine	1	3	1	0.0045	13	15	270	"	"
Lubricating Oil Purifier No. 1	1	3	1	0.0045	13	15	240	"	"
Emergency Diesel Cooling Water Pump	1	3	1	0.0045	13	15	200	"	"
Ventilating Fan for Mid-accommodation	1	3	1	0.01	13	31	570	"	"

LIGHTING, HEATING, WIRELESS, NAVIGATION LIGHTS, ETC., CABLES.

DESCRIPTION.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (lead plus return feet).	INSULATION.	PROTECTIVE COVERING.
	No. in Parallel per Pole.	Sectional Area or No. and Dia. of Strands. Sq. ins. or sq. mm.	In the Circuit.	Rule.			
2-LD-11 Engine Room Lower Portside Lighting	1	0.01 (3pole)	11	22	80	Rubber	Lead covered and steel armoured
From Power Distribution Box PD-7 to -							
Electric Heater 1 K.W.	1	0.003 (1pole)	5	10	30	"	"
2-PD-7 Electric Toaster 1 K.W.	1	0.003 (1pole)	5	10	30	"	"
From Power Distribution Box PD-9 to -							
Electric Heater 1 K.W.	1	0.003 (1pole)	5	10	30	"	"
2-PD-9 Electric Toaster 1 K.W.	1	0.003 (1pole)	5	10	30	"	"
From Main Switchboard to -							
Fuel Oil Heater	1	0.0045 (1pole)	14	15	120	"	"
W-1 Wireless Switchboard	1	0.2 (1pole)	100	184	600	"	"
W-3 Wireless Switchboard	1	0.06 (3pole)	20	58	120	"	"
LD-13 Navigation Light Indicator	1	0.003 (2pole)	2	10	720	"	"
LD-1 From Lighting Section Box LD-1 to Navigation Light Indicator	1	0.003 (2pole)	2	10	30	"	"
From Main Switchboard to -							
PD-11 Electric Refrigerator, Anemometer and Echo-Sounder	1	0.0045 (3pole)	8	15	720	"	"
L-1 2 K.W. Morse Signal Light	1	0.01 (1pole)	10	31	720	"	"
CD-1 Gyro Compass Auto Pilot	1	0.0225 (1pole)	20	46	600	"	"
CD-3 Echo-Sounder, Shiplog, Whistle and Motor Driven-Sounding Machine	1	0.0145 (1pole)	10	37	600	"	"
B-1 Battery Charging Switchboard	1	0.0145 (1pole)	20	37	600	"	"
S-1 Suez Searchlight via Wheelroom	1	0.0145 (1pole)	10	37	900	"	"
CD-5 Motor Siren Fore mast	1	0.03 (1pole)	21	53	900	"	"
CD-11 Electric Telegraph, Helm Indicator and Sal-log	1	0.003 (2pole)	5	10	150	"	"

MOTOR CABLES.

ALL IMPORTANT MOTORS TO BE ENUMERATED.	No.	B.H.P.							
From Main Switchboard to -									
Fresh Water Pump	1	1	1	0.0045	45	15	500	Rubber	Lead covered and steel armoured
Fuel Oil Mixer	1	3	1	0.0045	13	15	60	"	"
Fuel Oil Service Pump	1	3	1	0.0045	13	15	80	"	"
WM-1 Welding Machine Motor	1	15	1	0.04	59	64	270	"	"
LM-1 Lifting Machine Motor	1	7.5	1	0.0225	31	46	270	"	"
From Power Distribution Box -									
PD-1 to -									
No. 1 Cooling Water Pump and Compressor for Refrigerating Mach.	1	2	1	0.0225	31	46	120	"	"
2-PD-1 No. 2 Cooling Water Pump and Compressor for Refrigerating Mach.	1	2	1	0.0225	31	46	70	"	"
PD-3 to -									
1-PD-3 No. 1 Ventilating Fan for Aft-accommodation	1	3	1	0.0045	13	15	30	"	"
2-PD-3 No. 2 Ventilating Fan for Aft-accommodation	1	3	1	0.0045	13	15	30	"	"
PD-5 to -									
1-PD-5 Washing Machine	1	1	1	0.003	5	10	270	"	"
2-PD-5 Extractor	1	1	1	0.003	5	10	270	"	"
M-65 to -									
1-M-65 Oil Burning Fan	1	1	1	0.003	5	10	330	"	"
2-M-65	1	1	1	0.003	5	10	280	"	"



The Electrical Equipment is installed in accordance with the approved plans and the requirements of the Rules.

All Insulated Conductors are guaranteed to have been tested at the maker's works as specified in the Rules.

The foregoing is a correct description.

Takeo Morimoto Electrical Contractors. Date.....  
Standing Director, Kawasaki Dockyard.

#### COMPASSES.

Have the compasses been adjusted under working conditions..... yes

Takeo Morimoto Builder's Signature. Date.....  
Standing Director, Kawasaki Dockyard.

Have the foregoing descriptions and schedules been verified and found correct..... yes

Is this installation a duplicate of a previous case..... no If so, state name of vessel.....

Plans. Are approved plans forwarded herewith..... no If not, state date of approval..... 12-11-51

Certificates. Are certificates of test for motors engaged on essential sea services and generators forwarded herewith..... yes

General Remarks. (State quality of workmanship, whether insulation tests, etc., have been made, opinions as to class, etc.)

The Electrical Installation of this vessel has been constructed under Special Survey in accordance with the Rules, approved Plan and Secretary's letters.

Materials were found to be sound & free from defects and the workmanship is good.

The Generators & Motors etc. have been examined under full load working condition to Rules requirement and found satisfactory.

Total Capacity of Generators..... 540 Kilowatts.  
(Included Emergency Generator)

The amount of Fee ... £ 261,820 When applied for,.....

When received,.....

Travelling Expenses (if any) £ : :.....

Aburris & K. Takushi  
Surveyor to Lloyd's Register of Shipping.

TUES. 22 JUL 1952

Committee's Minute.....

Assigned..... S. F. E. Moly. sp1