

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Date of writing Report 19__ When handed in at Local Office 19__ Port of Shimonoseki
 Received at London Office
 No. in Survey held at Nagasaki, Japan Date, First Survey Last Survey 14 Oct 1957
 Reg. Book. (No. of Visits)
 on the M.V. "KOHOKU MARU" Tons Gross 2208 Net 5350
 Built at Nagasaki, Japan By whom built Mitsubishi Zosen K.K. Yard No. 1497 When built 1957-10
 Owners Daido Kaiun K.K. Port belonging to Kobe
 Installation fitted by Mitsubishi Zosen K.K., Nagasaki Works When fitted 1957-10
 Is vessel equipped for carrying Petroleum in bulk No Is vessel equipped with D.F. Yes E.S.D. Yes Gy.C. Yes Sub.Sig. No Radar Yes
 Plans, have they been submitted and approved. Yes System of Distribution 3 Wire 3 Phase Voltage of Lighting 110
 Heating 110 Power 440 D.C. or A.C., Lighting A.C. Power A.C. If A.C. state frequency 60 cycles
 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. - and level compounded under working conditions. -
 Are the generators arranged to run in parallel. Yes Is the compound winding connected to the negative or positive pole. -
 Have machines 100 kw. and over been inspected by the Surveyors during manufacture and testing. Yes Have certificates of test for machines
 under 100 kw. been supplied and the results found as per Rule. Yes Position of Generators Port Fwd., Port Aft
 Inboard and Port Aft Outboard on platform level in machinery space
 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 at centre of fwd. end
 on platform level in machinery space.
 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. phenolic resin bonded board & bar, if of synthetic insulating
 material is it an Approved Type. - 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. Triple pole linked air circuit breaker with
 instantaneous overcurrent trip in each phase, overcurrent relay in each phase, performance
 overcurrent relay for hold fan circuit, reverse power relay and triple pole linked isolating
 switch fitted neutral insulated from earth Triple pole linked air circuit breaker with
 and the switch and fuse gear (or circuit breakers) for each outgoing circuit. Breakers of De-ion type made by Mitsubishi
 Electric Mfg. Co., Ltd., Tokyo.
 Are compartments containing switchboards composed of fire-resisting material or lined as per Rule. Yes Instruments on main switchboard 6
 ammeters 3 voltmeters 1 synchronising devices. For compound machines in parallel are the ammeters and reverse current
 3 wattmetres, 2 frequency metres, 1 watthour metre
 protection devices connected on the pole opposite to the equaliser connection. - Earth Testing, state means provided 2 set for
 power and lighting circuits Preference Tripping, state if provided. - and tested. -
 Switches, Circuit Breakers and Fuses, are they as per Rule. Yes are the fuses an Approved Type. Yes
 Fuji Electric Mfg. Co. Ltd. and
 make of fuses Itanomiya Mfg. Co., are all fuses labelled. Yes If circuit breakers are provided for the generators, at what
 overload do they operate 150% (480A.) 19 sec. and at what current do the reverse current protective-
 devices operate 25 KW. 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 6.2 volts. Are all ~~power cables~~ 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 State
 type of cables (if in conduit this should also be stated) in machinery spaces in conduit below platform RLC & RHRC
 and laundries. RLC & RHRC State how the cables are supported or protected Cables of metal braided recured
 by metal clips on coated steel hangers or galvanized perforated steel plates. Cables in
 cargo spaces protected by steel platings.
 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. Yes Refrigerated chambers, are the cables and fittings as per Rule. Yes
 Have refrigeration fan motors been constructed under survey. Yes and test certificates supplied. Yes
 Are the motors accessible for maintenance at all times. Yes

Alternative Lighting, are the groups of lights in the engine and boiler rooms arranged as per Rule. Yes Emergency Supply, state position Boat deck star'd. side (Radio Room), 24V. battery units with automatic control switch for lighting passage, machinery spaces and boat embarkation lights 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, fitted and adequately ventilated as per Rule. Yes, state battery capacity in ampere hours. 24V. 200A.H & 24V. 80 A.H Where required to do so does it comply with 1948 International Convention. Yes Lighting, is fluorescent lighting fitted. Yes If so, state nominal lamp voltage. A.C. 110V and compartments where lamps are fitted. Dining Saloon and Smoking Room Fittings, are all fittings on weather decks, in stokeholds and engine rooms and wherever exposed to drip or condensed moisture, weatherproof. Yes Searchlights, No. of One, whether fixed or portable. portable, 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. Have certificates of test for motors under 100 BHP intended for essential sea services been supplied and the results found as per Rule. Yes Lightning Conductors, where required are they fitted as per Rule. Ships carrying Oil having a Flash Point of 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. Yes Are the fittings for pump rooms, tween deck spaces, etc., in accordance with the special requirements for such ships. Yes Are all cables lead covered as per Rule. E.S.D., if fitted state maker. Tokyo Keiki Seisakus no location of transmitter and receiver. E.S. Compartment of No. 3 Double Bottom Tank, Frame Nos. 119 to 120 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.	KVA	RATED AT	PRIME MOVER.
MAIN	3	Mitsubishi Electric Mfg. Co., Ltd.	250	450	321
EMERGENCY					
ROTARY TRANSFORMER					

GENERATOR CABLES.

DESCRIPTION.	No. of	KVA	CONDUCTORS.	MAXIMUM CURRENT IN AMPERES.	APPROX. LENGTH (lead plus resp. feet).	INSULATION.	PROTECTIVE COVERING.
MAIN GENERATOR	3	250	2(3C)	371.083	321	VLC	
EQUALISER							
EMERGENCY GENERATOR							
ROTARY TRANSFORMER: MOTOR							
GENERATOR							

MAIN DISTRIBUTION CABLES (to Auxiliary Switchboards, etc.).

DESCRIPTION.	No. of	KVA	CONDUCTORS.	MAXIMUM CURRENT IN AMPERES.	APPROX. LENGTH (lead plus resp. feet).	INSULATION.	PROTECTIVE COVERING.
Power: (From main switch board) 450V.							
Engine Room Auxiliaries (star'd)	P-12	1(3C)	19/.064	81	✓ 91	21	VLC
" (port & aft)	P-13	1(3C)	7/.064	43.3	✓ 91	25.8	"
" (3rd Dk.)	P-14	1(3C)	19/.064	✓ 91	17.7	"	
Engine Room Ventilating Fan	P-15	1(3C)	7/.052	27.9	✓ 38	17	"
Cargo Winch (Fwd)	P-16	2(3C)	37/.072	277	✓ 166	43	"
" (Aft)	P-17	2(3C)	37/.072	263	✓ 166	53.8	"
Hold Fan	P-18	1(3C)	19/.064	81.7	✓ 91	18.5	"
Ref. Machine	P-19	1(3C)	37/.083	172	✓ 200	15.2	"
Thermotank Fan	P-20	1(3C)	7/.052	31	✓ 38	38	"
Radio	P-21	1(3C)	7/.036	9.5	✓ 19	32.5	"
Gyro-Compass	P-22	1(3C)	7/.036	1.6	✓ 12	25.5	RHC
Trans. for lighting	P-25	1(3C)	19/.064	77	✓ 91	9	VLC
Shore Power Connection Box	P-26	1(3C)	37/.083	200	✓ 200	39	"

DISTRIBUTION CABLES (to Section-Boards and Distribution-Fuse-Boards, etc.).

DESCRIPTION.	No. in Parallel per Pole.	Sectional Area of No. and Dia. of Strands Sq. ins. or sq. mm.	MAXIMUM CURRENT IN AMPERES. In the Circuit.	Rule.	APPROX. LENGTH (lead plus return feet).	INSULATION.	PROTECTIVE COVERING.
Lighting:-(From main switch board) 113V							
L-1	1(3C)	7/.064	33.6	✓ 51	32	VLC	
Living quarter light	L-2	1(3C)	19/.083	117.5	✓ 128	12	"
Cargo Light	L-3	1(3C)	19/.064	77	✓ 91	16	"
Engine room light	L-4	1(3C)	19/.064	80	✓ 91	11	"
I.C. Panel C-1	L-5	1(3C)	7/.044	6	✓ 29	32	"
Cooking apparatus	L-6	1(3C)	37/.072	92	✓ 166	27.5	"
Radio	L-7	1(3C)	7/.052	24	✓ 38	30.5	"

MOTOR CABLES.

ALL IMPORTANT MOTORS TO BE ENUMERATED.	No.	B.H.P.	CONDUCTORS.	MAXIMUM CURRENT IN AMPERES.	APPROX. LENGTH (lead plus resp. feet).	INSULATION.	PROTECTIVE COVERING.
* Jacket & Piston Cool. P.W. Pump	2	42	1(3C)	19/.044	50	✓ 58	8.6/8.7 VLC
* Cooling S.W. Pump	2	55	1(3C)	19/.052	66	✓ 70	6.7/5.1 VLC
* Lub. Oil Pump	2	15	1(3C)	7/.044	21	✓ 29	3.4/3.24 VLC
L.O. Shifting Pump	1	4	1(3C)	3/.036	5.4	✓ 7	14.5 RHRC
O.F. Service Pump	1	4	1(3C)	3/.036	5.4	✓ 7	13.5 RHRC
O.F. Transfer Pump	1	15	1(3C)	7/.044	23.4	✓ 29	15 VLC
L.O. Purifire	1	2	1(3C)	3/.036	2.7	✓ 7	13.5 RHRC
O.F. Purifire	3	2	1(3C)	1/.064	2.8	✓ 7	16.1/16.3 RHRC
O.F. Clarifire	2	2	1(3C)	1/.064	2.8	✓ 7	10.9/12.5 RHRC
Purifire Pump	2	3	1(3C)	1/.064	3.8	✓ 7	16.8/16.9 RHRC
Purifire Pump	1	1.5	1(3C)	1/.064	2.1	✓ 7	18.9 RHRC
Bilge Pump	1	5.5	1(3C)	7/.036	8.1	✓ 12	9 RHRC
* Bilge & Ballast Pump	1	45/45	1(3C)	19/.064	55/91	✓ 91	32.2 VLC
* Fire & G.S. Pump	1	50	1(3C)	19/.052	59	✓ 70	29.7 VLC
Forced Circulation Pump	2	5	1(3C)	3/.036	6.0	✓ 7	29/28 RHRC
Eng. Room Vent. Fan	2	5	1(3C)	3/.036	6.6	✓ 7	48/55.5 RHRC
* Steering Gear	2	20	1(3C)	7/.044	28.5	✓ 29	97/93 VLC
Aux. Blower	1	30	1(3C)	7/.052	35	✓ 38	30 VLC
Turbo Charger L.O. Pump	2	2	1(3C)	3/.036	2.9	✓ 7	38/37 RHRC
Windlass DC. 440V.	1	80	1	19/.064	158	✓ 91	VLC
Mooring Winch DC. 220V.	1	53	2	19/.083	208	✓ 128	VLC
5 Ton Cargo Winch	4	53	2	19/.083	208	✓ 128	VLC
3 Ton Cargo Winch	14	30	2	19/.064	120	✓ 91	VLC
M-G. Motor 5 Ton Winch	2	85 KW	1(3C)	19/.083	139	✓ 128	VLC
M-G. Motor for 3 Ton Winch	7	45 KW	1(3C)	19/.052	43	✓ 70	VLC
Excenter Motor for M-G. Rm.	4	20	1(3C)	7/.044	24.5	✓ 29	VLC
Ref. Compressor	3	30/15	1(3C)	7/.064	✓ 70	21.1/19.5	VLC
Ref. Cooling Pump	2	5	1(3C)	3/.036	6.2	✓ 7	23/24.3 RHRC
Gold Air Circulating Fan	4	4/2	1(3C)	3/.036	✓ 7	53.5/48.5	RHRC

Note 1. VLC - Varnished Cambric Insulated Lead Alloy Sheathed & Steel Wire Braided Cable
RHRC - Vulcanized Rubber Insulated Polychloroprene Sheathed & Steel Wire Braided Cable
2. * - Connected to main switchboard directly
3. o - Intermittently loaded

NOTE.—Use Rpt. 13 Continuation Sheet if the above space is insufficient.

012542-012548-0215 2

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.

S. Koga

Electrical Contractors.

Date

NAGASAKI WORKS
MITSUBISHI ZOSEN KABUSHIKI KAISHA

MITSUBISHI SHIPBUILDING & ENGINEERING CO., LTD.

COMPASSES.

Have the compasses been adjusted under working conditions

Yes

S. Koga

Builder's Signature.

Date

NAGASAKI WORKS
MITSUBISHI ZOSEN KABUSHIKI KAISHA

MITSUBISHI SHIPBUILDING & ENGINEERING CO., LTD.

Have the foregoing descriptions and schedules been verified and found correct

Yes

Is this installation a duplicate of a previous case

Yes

If so, state name of vessel

M.V. "KOSEI MARU"

Plans. Are approved plans forwarded herewith

No

If not, state date of approval

22nd June, 1957

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

YES

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

The Electrical Equipment and Installation of this ship have been made under special survey in accordance with the requirements of the Rules, the approved plans and the Secretary's letters.

The materials and workmanship are sound and good.

All tests and trials as required by the Rules have been completed with satisfactory results.

Total Capacity of Generators

750

K.V.A.

~~KVA~~

The amount of Fee ... £165,600
(Main Generators Construction
Fee £71,550 charged on 26/9/57)

When applied for,
NOV. 11, 1957
LOCALLY

When received,

19

Travelling Expenses (if any) £

[Signature]
Surveyor to Lloyd's Register of Shipping.

TUESDAY 31 DEC 1957

Committee's Minute

Assigned

See Rpt. 1.



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Lloyd's Register
Foundation