

# REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Date of writing Report June 9 1956. When handed in at Local Office AUG. 29, 1956 1956 Port of KOBE Received at London Office 10 SEP 1956

No. in Survey held at Tamano, Japan Date, First Survey 2nd Dec. '55 Last Survey 7th June 1955  
Reg. Book. (No. of Visits 18)

on the M.V. "MIKAGESAN MARU" Tons { Gross 7200.05 Net 4019.43

Built at Tamano, Japan By whom built Mitsui Shipbuilding & Eng., Co., Ltd. Yard No. 609 When built 1956-6.

Owners Mitsui Steamship Co., Ltd. Port belonging to Tokyo

Installation fitted by Mitsui Shipbuilding & Engineering Co., Ltd. When fitted 1956-6.

Is vessel equipped for carrying Petroleum in bulk - 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 Two Cond. Insul. Voltage of Lighting 220

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

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

Are the generators arranged to run in parallel Yes Is the compound winding connected to the negative or positive pole Negative

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 Engine Room Port side built.

### Seat on Tank Top

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 Forward Port 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 Bonded Board, 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 Triple pole air-break circuit breaker with over current and reverse current protection and a triple pole isolating switch.

and the switch and fuse gear (or circuit breakers) for each outgoing circuit Double poles air-break, circuit breaker with over current protection, for circuits rated above 300 amperes double pole switch and fuse for circuit rated below 300 amperes (except -steering gear 200 amperes circuit breaker 1 set)

Are compartments containing switchboards composed of fire-resisting material or lined as per Rule Yes Instruments on main switchboard 9 ammeters 5 voltmeters - synchronising devices. For compound machines in parallel are the ammeters and reverse current protection devices connected on the pole opposite to the equaliser connection Yes Earth Testing, state means provided Two lamps in series with mid-point earthed Preference Tripping, state if provided See \*, and tested Yes

Switches, Circuit Breakers and Fuses, are they as per Rule Yes, are the fuses an Approved Type Yes make of fuses MITSUI "MLK"CAT-3, are all fuses labelled Yes If circuit breakers are provided for the generators, at what overload do they operate 1533 Amperes- 20 sec., and at what current do the reverse current protective devices operate 102 amperes 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 9.65 volts 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 State type of cables (if in conduit this should also be stated) in machinery spaces Lead Seathed Armoured, galleys Lead Seathed Armoured and laundries Lead Seathed State how the cables are supported or protected Clipped to solid or perforated steel tray structured steel work or wood work

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

\* Main Generator circuit breakers -150% rate cut and time delays 20 sec.  
Main Generator circuit breakers -110% rate cut and time delays 15 sec.

Alternative Lighting, are the groups of lights in the engine and boiler rooms arranged as per Rule Yes Emergency Supply, state position

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 6x4V 200AH, 12x4V 120AH, 4x4V 120AH, 3x50V 2AH where required to do so does it comply with 1948 International Convention

Lighting, is fluorescent lighting fitted Yes If so, state nominal lamp voltage and compartments where lamps are fitted

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 1, whether fixed or portable 1, are they of the carbon arc or of the filament type Carbon Arc

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

Lightning Conductors, where required are they fitted as per Rule Yes

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 Osaka 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 Yes

E.S.D., if fitted state maker Nippon Electric Co. Ltd. location of transmitter and receiver Fr. No. 127 Starboard

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.	
			Kw. per Generator.	Volts.	Amps.	Revs. per Min.	TYPE.	MAKER.
MAIN	3	Tokyo Shibaura Elec. Co. Ltd.	230	225	1022	425	Oil Eng.	Mitsui Shipbuilding & Eng. Co., Ltd.
EMERGENCY ROTARY TRANSFORMER								

GENERATOR CABLES.

DESCRIPTION.	No. of	Kw.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (lead plus return) M.	INSULATION.	PROTECTIVE COVERING.
			No. in Parallel per Pole.	Sectional Area or No. and Dia. of Strands Sq. ins. or mm <sup>2</sup> .	In the Circuit.	Rule.			
MAIN GENERATOR	230	2	2	0.6	1022	1210	*	V.C.	L.S.A.
EQUALISER	1		1	0.6		605			
	* #1		28	Metres					
	#2		27	"					
	#3		40	"					
EMERGENCY GENERATOR									
ROTARY TRANSFORMER: MOTOR									
" GENERATOR									

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

DESCRIPTION.	No.	Sq. ins.	MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (lead plus return) M.	INSULATION.	PROTECTIVE COVERING.
			In the Circuit.	Rule.			
A.C. Switch Board	1	0.01	30A	30A	23M	V.C.	L.S.A.
Power Panel No.1 (Bridge Instrument)	1	0.007	28.8A	30A	58M	"	"
" No.2 (GYRO Comp. GYRO pilot)	1	0.007	13.1A	30A	50M	"	"
" No.3 (Acc. Vent Fan)	1	0.01	30A	45A	54M	"	"
" No.4 (Cargo winch)	1	0.3	690A	408A	150M	"	"
" No.5 ( " )	1	0.4	970A	492A	90M	"	"
" No.6 (Cargo Hold vent fan)	1	0.06	121A	143A	85M	"	"
" No.7 (Cargo winch)	1	0.3	690A	408A	110M	"	"
" No.8 (Cargo Hold vent fan)	1	0.06	82A	143A	105M	"	"
" No.9 (Cargo winch)	1	0.2	560A	314A	160M	"	"
" No.10 (Cargo Hold vent fan)	1	0.03	61A	92A	70M	"	"
" No.11 (Cargo Desiccator prov. ref.)	1	0.04	77.6A	101A	80M	"	"
" No.12 (Cargo Ref. Machine)	1	0.4	395A	448A	32M	"	"
" No.13 (Eng. Rm. vent fan)	1	0.0225	68A	72A	20M	"	"
" No.14 (Burning O.P. Boiler W. Cir. P.)	1	0.01	39.1A	41A	29M	"	"
" No.15 (Grinder Comb. Univ. Mr)	1	0.01	39A	41A	48M	"	"
" No.16 (F.O. Mecha. F., L.O. Purifier)	1	0.03	84A	84A	46M	"	"

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

DESCRIPTION.	No. in Parallel per Pole.	Sectional Area or No. and Dia. of Strands Sq. ins. or mm <sup>2</sup> .	MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (lead plus return) M.	INSULATION.	PROTECTIVE COVERING.
			In the Circuit.	Rule.			
Cargo Light Panel No.1	1	0.01	17A	45A	16	V.C.	L.S.A.
" " No.2	1	0.0145	36A	55A	18	"	"
" " No.3	1	0.0145	32A	60A	110	"	"
" " No.4	1	0.0145	15A	60A	70	"	"
Light Panel No.1	1	0.01	35A	45A	26	"	"
" " No.2	1	0.0145	55A	60A	24	"	"
" " No.3	1	0.06	130A	143A	40	"	"
" " No.4	1	0.0045	5A	15A	136	V.I.R.	"
" " No.5	1	0.007	8A	30A	126	V.C.	"
" " No.6	1	0.01	21A	45A	56	"	"
" " No.7	1	0.0145	50A	55A	18	"	"
Wireless Switch board	1	0.03	75A	92A	80	"	"
Battery Switch board	1	0.010	20A	45A	10	"	"
Navigation Lamp indicator	1	0.007	1A	27A	65	V.I.R.	"
" " "	1	0.007	1A	27A	42	"	"
Shore Connection Box	1	0.3	400A	408A	116	V.C.	"

MOTOR CABLES.

ALL IMPORTANT MOTORS TO BE ENUMERATED.	No.	B.H.P.	Sq. ins.	MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (lead plus return) M.	INSULATION.	PROTECTIVE COVERING.	
				In the Circuit.	Rule.				
Windlass Motor	1	95	1	0.25	360A	400A	162M	V.C.	L.S.A.
Steering Gear	2	25	1	0.06	95A	143A	#1-186M	"	"
Engine Room vent fan	4	#1, #2, #3, #4	5	1	0.007	#1-213A, #2-213A, #3-213A, #4-213A	#1-70#2-60#3-64#4-75	"	"
Cargo Ref. Compressor	4	#1, #2, #3, #4	1	0.0225	59A	72A	#1-18#2-19#3-21#4-19	"	"
"	2	#1, #2	1	0.01	32A	41A	#1-24#2-26	"	"
Cool. W. Pump Mr. for Cargo Ref.	5	4	1	0.007	17A	27A	#1-45#2-43	"	"
Unit cooler fan	1	4	1	0.007	17A	30A	#2-43	"	"
"	2	#1, #2	1	0.0045	9A	15A	#1-65#2-48	"	"
"	2	#1, #2	1	0.007	13A	27A	#1-63#2-44	V.I.R.	"
Main Lub. oil pump	2	120	1	0.4	436A	448A	#1-73#2-70	V.C.	"
Lub. Oil Shift Pump	1	2	1	0.0045	9A	11A	44	V.I.R.	"
Main air compressor	2	100	1	0.3	370A	372A	#1-87#2-84	V.C.	"
Main fresh W., Sea W. cool. P.	40	1	0.1	152A	185A	60	"	"	
General Service Pump	1	40	1	0.1	152A	185A	65	"	"
Ballast Pump	1	40	1	0.1	152A	185A	65	"	"
Fuel valve cool. oil Pump	1	2	1	0.0045	9A	185A	46.5	V.I.R.	"
Fuel oil circulate pump	1	2	1	0.0045	9A	185A	47	V.I.R.	"
Fuel oil Transfer pump	1	20	1	0.003	77A	84A	85	V.C.	"
Fuel oil daily supply pump	1	6	1	0.007	25A	27A	82	V.C.	"
Boiler W. circulate pump	2	3	1	0.007	13A	27A	#1-15#2-12	V.C.	"
Burning oil pump for Boiler	2	1/2	1	0.0045	2.8A	27A	#1-28#2-30	V.I.R.	"
Forced draft fan	1	1 1/2	1	0.0045	7.5A	11A	12	"	"
Bilge pump	1	5	1	0.007	21A	27A	53	V.C.	"
Warping winch	1	60	1	0.15	230A	276A	192	"	"
Main Engine Turning gear	1	14	1	0.0145	55A	63A	70	"	"
Fresh water pump	1	6	1	0.007	25A	27A	78A	"	"
Sea water sanitary pump	1	3	1	0.007	13A	27A	52A	"	"
Fuel oil purifier	2	6	1	0.007	25A	27A	#1-25#2-25	"	"
Fuel Mechanical filter	1	3	1	0.007	13A	27A	30	"	"
Aux. Fresh W. & Sea W. cool. pump	2	7.5	1	0.01	30A	41A	F.W. 49 S.W. 46	"	"

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

27/9/36

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.

MITSUI SHIPBUILDING & ENGINEERING CO., LTD., TAMANO WORKS.

*J. Asano for S. Tanaka*  
Senior Managing Director. Electrical Contractors. Date

COMPASSES.

Have the compasses been adjusted under working conditions. Yes

MITSUI SHIPBUILDING & ENGINEERING CO., LTD., TAMANO WORKS

*J. Asano for S. Tanaka*  
Senior Managing Director. Builder's Signature. Date

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. 13th January, 1956.

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.)

Total Capacity of Generators. 690 Kilowatts.

The amount of Fee ... ¥216,750 When applied for, AUG. 21, 1956

Travelling Expenses (if any) £ See Rpt. 1. When received, 19.

*R. J. Sedgwick J. Monohira*  
Surveyor to Lloyd's Register of Shipping.

*¥56,250 refunded 2800 charged to NISHISHIBA DENKI KK. 2/3/56*

Committee's Minute TUESDAY 16 OCT 1956

Assigned See Rpt. 4 C.

Im. 754.-Transfer. (MADE AND PRINTED IN ENGLAND) (The Surveyors are requested not to write on or below the space for Committee Minutes.)

