

29 NOV 1960

Rpt. 13

No. FE-8236

# REPORT ON ELECTRICAL EQUIPMENT

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office

KOBE

Date of writing Report 27th Sept 1960 When handed in at Local Office NOV - 8 1960 Port of

No. in Survey held at Tamano, Japan Date, First Survey 25-6-60 Last Survey 20-8-1960  
Reg. Book (No. of Visits 15)

on the M.S. "NAGAOSAN MARU" Tons Gross 6554.8 Net

Built at Tamano, Japan By whom built Mitsui Shipbuilding & Engineering Co., Ltd., Yard No. 641 When built Aug. 1960

Owners Mitsui Steam Ship Co., Ltd. Port belonging to Tokyo, Japan

Installation fitted by Mitsui Shipbuilding & Engineering Co., Ltd., When fitted Aug. 1960

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. - Radar Yes

Plans, have they been submitted and approved Yes System of Distribution Three & Two Wire Voltage of Lighting 110V

Heating 110V Power 440V D.C. or A.C. Lighting A.C. Power A.C. If A.C. state frequency 60 ~

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 - Position of Generators Engine room port side

forward inboard, forward outboard & aft

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 Engine room port

forward

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 & reverse power protection, and a triple pole isolating switch

and the switch and fuse gear (or circuit breakers) for each outgoing circuit Triple pole air break circuit breakers with over current protection, and two pole air break circuit breakers with over current protection.

Are compartments containing switchboards composed of fire-resisting material or lined as per Rule Yes Instruments on main switchboard 10 ammeters 5 voltmeters 1 synchronising devices. For compound machines in parallel are the ammeters and reverse current

protection devices connected on the pole opposite to the equaliser connection - Earth Testing, state means provided Lamps Generator 110% over current time delay 10sec, and tested Yes Preference Tripping, state if provided Yes

Switches, Circuit Breakers and Fuses, are they as per Rule Yes, are the fuses an Approved Type Yes make of fuses Utsunomiya, are all fuses labelled Yes If circuit breakers are provided for the generators, at what

overload do they operate 50%, 20 sec. power power, and at what current do the reverse current protective devices operate 22 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 11.1 V 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

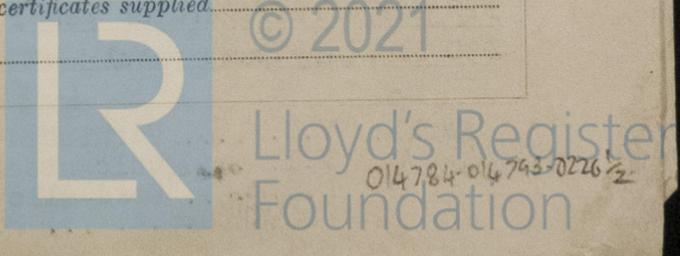
type of cables (if in conduit this should also be stated) in machinery spaces Neoprene sheathed galleys Neoprene sheathed armoured armoured and laundries - State how the cables are supported or protected Clipped to solid or perforated

steel tray structure, 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.



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... **24V, 120AH 2 sets**... Where required to do so does it comply with 1948 International Convention... **-**...

Lighting, is fluorescent lighting fitted... **Yes**... If so, state nominal lamp voltage... **110**... and compartments where lamps are fitted... **"URAM HLOOAN"**...

All accommodation rooms, saloon & smoking rooms... **"URAM HLOOAN"**...

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... **-**... whether fixed or portable... **-**... are they of the carbon arc or of the 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... **None**...

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... **-**... are all fuses of an Approved Cartridge Type... **-**... make of fuse... **-**... Are the fittings for pump rooms, 'tween deck spaces, etc., in accordance with the special requirements for such ships... **-**... Are all cables lead covered as per Rule... **-**...

E.S.D., if fitted state maker... **Nippon Electric Co. Ltd.**... location of transmitter and receiver... **bottom of FR.110, Port.**...

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				TYPE	PRIME MOVER
			Kw. per Generator	Volts	Ampères	Revs. per Min.		
MAIN	3	Mitsui S.B. & Eng. Co. Ltd.	275	450V	353	514	Mitsui B&W	Mitsui S.B. & Eng. Co. Ltd.
EMERGENCY ROTARY TRANSFORMER								

GENERATOR CABLES

DESCRIPTION	No. of	Kw.	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.	In the Circuit	Rule			
MAIN GENERATOR	3	275	2	0.25	353	462	M	V.C.	L.S.A.
" EQUALISER									
EMERGENCY GENERATOR									
ROTARY TRANSFORMER: MOTOR									
" GENERATOR									

MAIN DISTRIBUTION CABLES (to Auxiliary Switchboards, etc.)

DESCRIPTION	No. of	Kw.	CONDUCTORS	MAXIMUM CURRENT IN AMPERES	APPROX. LENGTH (lead plus return feet)	INSULATION	PROTECTIVE COVERING
			No. in Parallel per Pole	In the Circuit	Rule		
P2 Boiler panel	1		3C-0.007	15.2	21	20	V.C. Polychlo. S.A.
P3 Work shop panel	1		3C-0.007	10.2	21	22	" " "
P4 Self-jector & purifier panel	1		3C-0.0225	36.2	51	25	" L.S.A.
P5 Turbo-charger L.O. pump panel	1		3C-0.007	7	21	22	" Polychlo. S.A.
PL4 Provision refrigerator panel	1		3C-0.01	27	32	30	" L.S.A.
PL6 No.2-3 Hold cargo winch panel	2		3C-0.15	220	364	48	" " "
PL7 No.1-2-3- Hold Vent.fan panel	1		3C-0.0145	23.2	36	48	" Polychlo. S.A.
PL8 Thermo tank fan panel	1		3C-0.007	13.5	24	22	" " "
PL9 Engine room vent.fan panel	1		3C-0.0145	28	32	12	" " "
P20 No.4-5 Hold vent.fan panel	1		3C-0.007	17.1	24	46	" " "
P21 No.4-5 Hold cargo & mooring winch panel	1		3C-0.2	154	181	59	" " "
P22 Cargo refrigerator panel	1		3C-0.1	91.2	128	22	" L.S.A.
P30 Sanitary pump panel	1		3C-0.007	12.4	21	29	" Polychlo. S.A.

Marks: V.C. .... Varnished-cambric.  
V.I.R. .... Vulcanised-rubber.  
L.S.A. ... Lead-alloy sheathed and armoured.  
POLYCHLO.S.A. .... Polychlorofrene compound sheathed and steel wire braided.

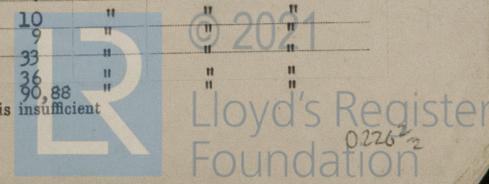
DISTRIBUTION CABLES (to Section-Boards and Distribution-Fuse-Boards, etc.)

DESCRIPTION	No. in Parallel per Pole	Sectional Area or No. and Dia. of Strands Sq. ins.	MAXIMUM CURRENT IN AMPERES		APPROX. LENGTH (lead plus return feet)	INSULATION	PROTECTIVE COVERING
			In the Circuit	Rule			
L1 No.2-3 Hatch cargo light panel	1	3C-0.06	57.1	84	40 <sup>M</sup>	V.C.	Polychlo.S.A.
L2 Wheel house & chart room light panel	1	3C-0.007	12.9	21	26	"	" " "
L3 Navigation light indicator	1	2C-0.007	2	27	36	"	L.S.A.
L4 Navi.bridge deck & boat deck light panel	1	3C-0.04	44.4	58	29	"	Polychlo.S.A.
L5 Saloon deck light panel	1	3C-0.1	63.5	103	35	"	" " "
L6 Upper deck midship light panel	1	3C-0.04	47.2	58	24	"	" " "
L7 Engine room light panel	1	3C-0.1	68.5	103	12	"	" " "
L8 2nd deck light panel	1	3C-0.04	34.5	58	22	"	" " "
L9 No.4-5 Hatch cargo light panel	1	3C-0.04	35.7	66	50	"	" " "
IC & R IC & Radio panel	1	3C-0.01	11	31	29	"	" " "
LC Gyro panel	1	660V 3C-0.0045	4.5	15	25	V.I.R.	" " "
R Wireless switchboard	1	3C-0.007	14.3	24	26	V.C.	" " "

MOTOR CABLES

ALL IMPORTANT MOTORS TO BE ENUMERATED	No.	B.H.P.	Kw.	CONDUCTORS	MAXIMUM CURRENT IN AMPERES	APPROX. LENGTH (lead plus return feet)	INSULATION	PROTECTIVE COVERING
				No. in Parallel per Pole	In the Circuit	Rule		
Boiler water circulating pump	2	2.2	1.6	3C-0.003	4.1	7	4.6 <sup>M</sup>	V.I.R. Polychlo. S.A.
Forced draft fan	1	1.1	0.8	3C-0.003	2.5	7	5	" " "
Burning oil pump	2	0.75	0.55	3C-0.003	1.7	7	15,13	" " "
L.O. Purifier	2	4	3	3C-0.0045	7.3	11	9,18	" " "
Bunker oil self-jector	2	5	3.7	3C-0.0045	9.6	11	12,14	" " "
L.O. pump for turbo-charger	2	1.5	1.1	3C-0.003	3.1	7	4,5	" " "
Main fresh water cooling pump	1	19	14	3C-0.03	36	46	35	V.C. " " "
Main sea water cooling pump	1	19	14	3C-0.03	36	46	39	" " "
Spare cooling water pump	1	19	14	3C-0.03	36	46	37	" " "
Main L.O. pump	2	50/45	37	3C-0.15	100/90	132	33,36	" " "
Fuel oil daily supply pump	1	3	2.2	3C-0.0045	5.9	11	20	" " "
Fuel oil transfer pump	1	10	7.5	3C-0.01	18.6	27	18	" " "
Cargo winch	16	23.5	17.5	3C-0.04	56	66	14, 9, 12, 8, 30, 28, 12, 9, 10, 7, 4, 1, 13, 8, 12, 8	" " "
Windlass	1	50	37	3C-0.1	100	118	20	" " "
Cargo hold vent. fan No.1	1	3	2.2	3C-0.0045	6	15	25	V.I.R. " " "
" " " " No.2	1	5.5	4	3C-0.0045	10.5	15	9	" " "
" " " " No.3	1	2	1.5	3C-0.003	4	10	10	" " "
" " " " No.4	1	5.5	4	3C-0.0045	10.5	15	9	" " "
" " " " No.5	1	2	1.5	3C-0.003	4	10	10	" " "
Thermo tank fan	2	3	2.2	3C-0.0045	6	15	6,6	" " "
Engine room vent. fan for turbo-charger	2	3	2.2	3C-0.0045	5.9	11	6,8	" " "
Engine room vent. fan	2	3.7	2.8	3C-0.0045	7.2	11	8,6	" " "
Mooring winch	1	33	24	3C-0.06	74	84	32	V.C. " " "
Cool. water pump for cargo reffrig.	2	1.5	1.1	3C-0.003	3	7	28,30	V.I.R. " " "
Vacuum pump for cargo reffrig.	1	0.75	0.55	3C-0.003	1.6	7	15	" " "
Cargo Reffrig. compressor	3	11/8.8	8.2	3C-0.0145	23/11	32	11,12,14	V.C. " " "
Unit cooler fan for cargo reffrig.	2	2.2/1.5	1.6	3C-0.003	4.3/3.1	7	16,27	V.I.R. " " "
L.O. Shift pump	1	1.5	1.1	3C-0.0045	3.1	11	20	" " "
Fuel valve cooling pump	1	0.75	0.55	3C-0.0045	1.7	11	15	" " "
Fuel oil circulating pump	1	0.75	0.55	3C-0.0045	1.7	11	16	" " "
Aux. fresh water cooling pump	1	3.7	2.8	3C-0.0045	6.7	11	24	" " "
Aux. sea water cooling pump	1	3.7	2.8	3C-0.0045	6.7	11	27	" " "
Sea water sanitary pump	1	3	2.2	3C-0.0045	5.5	11	10	" " "
Spare F.W. & S.W. Sanitary pump	1	3	2.2	660V 3C-0.0045	5.5	11	9	" " "
Fire & Ballast Pump	1	26	19	3C-0.04	46.2	58	33	" " "
Fire & G.S. Pump	1	26	19	3C-0.04	46.2	58	36	" " "
Steering Gear	2	11	8	3C-0.01	23	31	90,88	" " "

NOTE.—Use Rpt. 43 Continuation Sheet if the above space is insufficient



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 of the electrical equipment installed on board the vessel.

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

*S. Takato*  
Managing Director.

Electrical Contractors.

Date 30.9.60

COMPASSES

Have the compasses been adjusted under working conditions? Yes.

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

*S. Takato*  
Managing Director.

Builder's Signature.

Date 30.9.60

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. 1st June, 1960

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 electric installation of this ship has been constructed under Special Survey in accordance with the Rules, approved plans and Secretary's letters.

The materials and workmanship are sound and good. The generators and motors etc. have been tested under full working conditions to Rule requirements with satisfactory results.

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

Total Capacity of Generators 825 KVA  
Kilowatts.

The amount of Fee ... £214,900. When applied for, 19.

Travelling Expenses (if any) £ : / : When received, 19.

*G.M. Kersey & Y. Kojima*  
Surveyor to Lloyd's Register of Shipping  
G.M. Kersey & Y. Kojima.

FRIDAY 10 FEB 1961

Committee's Minute

Assigned

See Apt. 1

# RMS  
7.12.60

5m.3.58—Transfer. (MADE AND PRINTED IN ENGLAND)

CRK



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