

15 JAN 1960

Rpt. 13.

No. FE-6715

# REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office

Date of writing Report 5th Nov., 19 59. When handed in at Local Office 19 Port of KOBE

No. in Survey held at Kobe, Japan Date, First Survey Jun. 12th '59. Last Survey Oct. 12 19 59. Reg. Book. (No. of Visits 10)

on the Steel Single Screw s.s. "GEKKO MARU" Tons Gross 24,680.42 Net 16,278.80

Built at Kobe By whom built Kawasaki Dockyard Co., Ltd. Yard No. 972 When built Oct., 1959.

Owners Tokyo Tanker Co., Ltd. Port belonging to Tokyo

Installation fitted by Kawasaki Dockyard Co., Ltd. When fitted Oct., 1959

Is vessel equipped for carrying Petroleum in bulk Yes 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 Three phase three wire insulated Voltage of Lighting 115V

Heating 220V Power 440V 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 No Generators, are they compound wound A.C. generator with A.V.R. 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 Main generator:-

Generator flat port side, Aux. generator:- Store flat S.B. side in engine room

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 On manoeuvring flat forward, port side 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 A triple pole linked air circuit breaker with over current trip in each phase and a reverse power trip and a triple pole linked iso. knife switch

and the switch and fuse gear (or circuit breakers) for each outgoing circuit A triple pole linked air circuit breaker with over load trips.

Are compartments containing switchboards composed of fire-resisting material or lined as per Rule Yes Instruments on main switchboard 9 ammeters 8 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 Three earth lamps with metal filament Preference Tripping, state if provided - and tested -

Switches, Circuit Breakers and Fuses, are they as per Rule Yes, are the fuses an Approved Type "S.K." Type make of fuses Kawasaki Dockyard, are all fuses labelled Yes If circuit breakers are provided for the generators, at what overload do they operate 50% over load for 20 sec. and at what current do the reverse current protective-devices operate 5% reverse power Cables, are they insulated and protected as per Rule Yes if otherwise than as per Rule are they of an Approved Type Yes, state maximum fall of pressure between bus bars and any point under maximum load 3 volts. Are all paper insulated and varnished cambric insulated cables sealed at the ends Yes

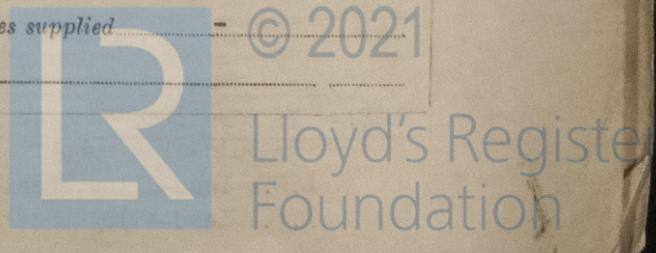
Are all the cable runs in accessible positions not exposed to drip or accumulation of water or oil, high temperatures or risk of mechanical damage Yes, are any cables laid under machines or floorplates Yes, if so, are they adequately protected Yes State type of cables (if in conduit this should also be stated) in machinery spaces V.L.C. & R.L.C., galleys R.L.C. and laundries R.L.C. State how the cables are supported or protected Generally clipped to steel hangers or steel saddles welded on the structural steel or direct to the structural wood-work protected by sheet steel plates or heavy gauge screwed steel conduits where necessary.

Are all lead sheaths, armoring 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 (Provision store only)

Have refrigeration fan motors been constructed under survey - and test certificates supplied -

Are the motors accessible for maintenance at all times Yes

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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 200 AH x 2 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 110V and compartments where lamps are fitted

Main gauge board, main and aux. switchboard and all living quarters.

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 - 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 -

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 Kawasaki Dockyard 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 Tokyo Keiki K.K. location of transmitter and receiver F.R. No.54 in engine room

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.
			per Generator.	Volts.	Amps.	Revs. per Min.	
MAIN	2	Kawasaki Dockyard	800	450	1026	1200	S. Turbine Kobe Shipyard & Eng. Wks. Ltd.
Auxiliary ROTARY TRANSFORMER	1	Kawasaki Dockyard	125	450	160	1200	Diesel Tokyo Motor Vehicle Works, Mitsubishi Nippon Heavy Ind. Ltd.

GENERATOR CABLES.

DESCRIPTION.	No. of	KVA	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (lead to meter)	INSULATION.	PROTECTIVE COVERING.
			No. in Parallel per Pole.	Sectional Area or No. and Dia. of Strands Sq. ins.	In the Circuit.	Rule.			
MAIN GENERATOR	2	800	6	0.2	1026	1200	100	V	L.C.
EQUALISER									
Auxiliary Switchboard	1	125	1	0.15	160	166	10	V	L.C.
EMERGENCY GENERATOR									
ROTARY TRANSFORMER : MOTOR									
GENERATOR.									

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

DESCRIPTION.	No.	Sectional Area or No. and Dia. of Strands Sq. ins.	MAXIMUM CURRENT IN AMPERES.	APPROX. LENGTH (lead to meter)	INSULATION.	PROTECTIVE COVERING.
From M.S.B. to A.S.B. *(MA-1)	1	0.25	231	20	V	L.C.
- do - joint box (MF-1)	1	0.1	128	24	"	"
From joint box to F.S.B. (")	1	0.1	128	97	"	L.A.
From A.S.B. to joint box (AF-1)	1	0.03	74	24	"	L.C.
From joint box to F.S.B. (")	1	0.03	74	97	"	L.A.
From M.S.B. to trans. primary (T1-P)	3	0.03	39.3	36	"	L.C.
- do - (T2-P)	3	0.03	26.3	39	"	"
From A.S.B. to trans. primary (AT1-P)	3	0.0045	6.6	11	R	"
From F.S.B. to trans. primary (FT1-P)	3	0.0145	13.4	15	V	"
- do - (FAT1-P)	3	0.0045	8.1	21	R	"
From M.S.B. to shore connection box	1	0.25	200	231	V	"

NOTE:- V: Varnished cambric insulated.  
R: Vulcanise rubber insulated.  
L.C.: Lead-alloy sheathed and steel wire braided.  
L.A.: Lead-alloy sheathed armoured.

M.S.B.: Main switchboard.  
A.S.B.: Auxiliary switchboard.  
F.S.B.: Forward switchboard.  
\* : Feeder No.

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

DESCRIPTION.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (lead to meter)	INSULATION.	PROTECTIVE COVERING.
	No. in Parallel per Pole.	Sectional Area or No. and Dia. of Strands Sq. ins.	In the Circuit.	Rule.			
From M.S.B. to D-1 Power dist box	1	0.0145	16.3	38	33	V	L.C.
- do - D2 - do -	1	0.0145	26	38	27	V	"
- do - D-3 - do -	1	0.0145	23.6	38	35	"	"
- do - D-4 - do -	1	0.0145	16.6	38	30	"	"
- do - D-5 - do -	1	0.06	80	100	15	"	"
- do - D-6 - do -	1	0.0145	15	38	27	"	"
- do - D-8 - do -	1	0.03	35	74	65	"	"
- do - D-9 - do -	1	0.03	38.5	74	20	"	"
- do - D-10 - do -	1	0.0145	16.6	38	30	"	"
- do - D-11 - do -	1	0.007	18.6	21	55	"	"
- do - D-12 - do -	1	0.03	38	74	48	"	"
From F.S.B. to FD-1 - do -	1	0.03	32	74	50	"	"
From F.S.B. to L-1 lighting section box	1	0.03	32	74	5	"	"
- do - L-2 - do -	1	0.0145	31	42	20	"	"
- do - L-3 - do -	1	0.03	51	74	23	"	"
- do - L-4 - do -	1	0.03	37	74	30	"	"
- do - L-5 - do -	1	0.06	76	100	10	"	"
- do - Joint box(Suez Search Light)	1	0.03	28	74	10	"	"
From Joint box to interlock connection box	1	0.03	28	74	80	"	L.C.A.
From A.S.B. to AG-2 communication D.box	1	0.007	8	32	15	"	L.C.
From F.S.B. to FL-1 lighting section box	1	0.0145	23	42	6	"	"
- do - FL-2 - do -	1	0.0145	24.8	42	6	"	"
- do - FL-3 - do -	1	0.0145	37	42	3	"	"
- do - navigation light	1	0.007	4	21	14	"	"
- do - radio switchboard	1	0.007	6	21	8	"	"

MOTOR CABLES.

ALL IMPORTANT MOTORS TO BE ENUMERATED.	No.	B.H.P.	CONDUCTORS.	MAXIMUM CURRENT IN AMPERES.	APPROX. LENGTH (lead to meter)	INSULATION.	PROTECTIVE COVERING.
Forced draft blower	2	140/78	1/1	0.2	178/105	200	70 V L.C.
Main circulating pump	2	105/54	1/1	0.15	128/76	166	25 " "
Fire & general service pump	1	55	1	0.06	64	100	40 " "
Lub. oil service pump	2	50	1	0.06	63	100	33 " "
Atomos. cond. circulating pump	1	40	1	0.06	51	100	22 " "
Main condensate pump	2	30	1	0.03	37.5	74	19 " "
Aux. circulating pump	2	25	1	0.0145	32	38	32 " "
Bilge & ballast pump	1	15	1	0.0145	19.5	38	44 " "
Sea water service pump	1	15	1	0.0145	19.5	38	32 " "
Fuel oil service pump	2	20/10	1	0.0145	25/15	38	45 " "
Fuel oil transfer pump	1	20	1	0.0145	26	38	24 " "
Engine room vent fan	4	12/3	1	0.007	16/5.8	19	47 " "
Engine turning gear	1	10	1	0.007	13	19	45 " "
Condensate & drain trans.F.	2	10	1	0.007	12.5	19	25 " "
Aux. condensate pump	2	7.5	1	0.0045	9.5	11	30 R " "
Gland exhaust fan	1	1	1	0.003	1.6	7	35 " "
Ship service air compressor	1	30	1	0.03	38.5	74	24 V " "
Control air compressor	1	10	1	0.007	14	19	22 " "
Steering gear	2	65	1	0.06	80	100	89 " "
Fresh water pump	2	5	1	0.0045	6.6	11	42 R " "
Cold starting F.O. service P.	1	1	1	0.003	1.6	7	12 " "
Cold starting forced draft fan	1	3	1	0.003	4.4	7	47 " "
Lub. oil purifier	2	3.5	1	0.003	4.5	7	21 " "
Bilge pump	1	5	1	0.0045	7	11	15 " "
Sanitary pump	2	5	1	0.0045	6.6	11	14 " "
Ref.compressor for ship service	2	10	1	0.007	13	19	12 V " "

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

All cables are 3 core type.

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 \_\_\_\_\_  
Managing Director of Kawasaki Dockyard Co., Ltd., Kobe, Japan.

COMPASSES.

Have the compasses been adjusted under working conditions. Yes

Takeo Morimoto Builder's Signature. Date \_\_\_\_\_  
Managing Director of Kawasaki Dockyard Co., Ltd., Kobe, Japan.

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. 16-10-58, 6-3-59, 25-3-59  
21-4-59

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 installation fitted in the ship has been installed under special survey in accordance with the Society's Rules, the approved plans and Secretary's letters.

The materials and workmanship are sound and good.

The generators and motors etc. have been examined under full working conditions to Rule requirements and found to be satisfactory.

500,000 - Transfer. (MADE AND PRINTED IN ENGLAND) (The Surveyors are requested not to write on or below the space for Committee Minutes.)

Total Capacity of Generators 1,725 K.V.A. ~~Kilowatts~~

The amount of Fee ... £	:	:	When applied for,
			19
Travelling Expenses (if any) £	:	:	When received,
			19

M. Ishiwatari  
Surveyor to Lloyd's Register of Shipping.  
M. Ishiwatari.

Committee's Minute FRIDAY 19 FEB 1960

Assigned See Rpt.!

