

Rpt. 13.

No. FE-7105

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office

Date of writing Report 17th Nov., 1960 When handed in at Local Office JAN 19 1961 Port of KOBE

No. in Survey held at Aioi Date, First Survey 26th Dec., 1959 Last Survey 8th Nov., 1960

Reg. Book. (No. of Visits 10)

on the Steel Single Screw s.s. "MIR" Tons { Gross 25,091.80 Net 16,302.35

Built at Aioi, Japan By whom built Harima Shipbuilding & Eng. Coy. Ltd. No. 529 When built April, 1960

Owners Vsesojuenoje Exportno-Importno Objedinenije Sudoisportno Port belonging to Odessa

Installation fitted by The Harima Shipbuilding & Engineering Co., Ltd. When fitted April, 1960

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. - Radar Yes

Plans, have they been submitted and approved Yes System of Distribution 3 phase 3 wire insulated Voltage of Lighting 110

Heating 220 Power 440 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 Yes Position of Generators P.s. of main floor 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 Main floor 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 Phenolic 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, reverse power and under voltage protections and a triple pole linked isolating switch

and the switch and fuse gear (or circuit breakers) for each outgoing circuit A triple pole linked "No-fuse" breaker with over current trips.

Are compartments containing switchboards composed of fire-resisting material or lined as per Rule Yes Instruments on main switchboard 6

ammeters 6 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 3 earth indicating 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 Yes

make of fuses Utsumomiya "Cellolite" are all fuses labelled Yes If circuit breakers are provided for the generators, at what overload do they operate 125% (1203A) about 20 sec. and at what current do the reverse current protective devices operate 5% (30 KW) reverse power Cables, are they insulated and protected as per Rule Yes

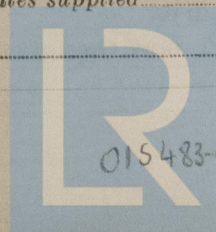
if otherwise than as per Rule are they of an Approved Type Yes state maximum fall of pressure between bus bars and any point under maximum load 12 volts Are all paper insulated and varnished cambric insulated cables sealed at the ends Yes

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 VLC & RLC galleys VLC & RLC and laundries RLC State how the cables are supported or protected clipped on steel hangers, saddles, or directly to structural woodwork and protected by sheet steel plating or heavy gauge steel conduit where necessary.

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 -

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, 200AH x 2 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.

Off's lounge, Dining saloon and Gauge board

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 Fuji Denki "Cartridge" 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. Kelvin & Hughes Ltd. location of transmitter and receiver between fr. No. 56 - 57

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			TYPE.	PRIME MOVER.	
			XX per Generator.	Volts.	Amps.	Volts.	Amps.	Revs. per Min.		MAKER.	
MAIN	2	Tokyo Shibaura Electric Co. Ltd.	750	450	963	1800			Steam Turbine	Ishikawajima Heavy Ind. Co., Ltd.	
Auxiliary	1	Tokyo Shibaura Electric Co. Ltd.	125	450	160.5	600			Diesel	Daihatsu Kogyo K.K.	
EMERGENCY ROTARY TRANSFORMER											

GENERATOR CABLES.

DESCRIPTION.	No. of	Kw.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (feet)	INSULATION.	PROTECTIVE COVERING.
			No. in Parallel per Pole.	Sectional Area or No. and Dia. of Strands.	In the Circuit.	Rule.			
MAIN GENERATOR	2	750	6	37/2.11	963	200x6	14	V	L.C.
EQUALISER									
Auxiliary GENERATOR	1	125	1	37/2.11	160.5	200	24	V	LC
ROTARY TRANSFORMER: MOTOR									
GENERATOR									

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

DESCRIPTION.							
Shore line connection box	1	37/2.11	200	200	26	V	LC
Midship sub-switch board	1	19/1.63	54.93	91	21	V	LC (M.S.B.-J.B.)
	2	19/1.63	54.93	58x2	110	R	LYA (J.B.-S.S.B.)
450V/115V 10KVAx3 Transformer (Fry)	1	7/1.63	38.5	51	8.5	V	LC
(Sry)	1	37/1.83	150.4	166	8.5	V	LC
450V/220V 7.5KVAx3 Transformer (Galley)	1	7/1.32	14.1	38	61	V	LC

NOTE:- V: Varnished cambric insulated cable.
R: Vulcanised rubber insulated cable (660 Grade)
r: (250V Grade)
L: Lead alloy sheathed
C: Steel wire braided.
A: Armoured
Y: Vinyl sheathed over lead alloy sheath.

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

DESCRIPTION.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (feet)	INSULATION.	PROTECTIVE COVERING.
	No. in Parallel per Pole.	Sectional Area or No. and Dia. of Strands.	In the Circuit.	Rule.			
No. 8-1 Section box	1	7/1.32	21	38	22	V	L.C.
No. 8-2 Section box	1	7/1.63	2.5	23	22	R	"
No. 8-4 Section board	1	7/1.32	13	38	32	V	"
No. 8-5 Section box	1	7/1.63	5.24	23	61	R	"
No. 8-6 Section box	1	7/1.63	27.3	51	9	V	"
No. 8-7 Section box	1	7/1.63	46.35	51	19	V	"
No. 8-8 Section box	1	19/1.32	42.7	70	36	V	"
No. 8-9 Section box	1	7/1.63	6.59	23	35	R	"
No. 8-12 Section board	1	7/1.32	12	38	22	V	"
No. 9-1 Section box	1	7/1.63	13.6	51	44	V	"
No. 9-5 Section box	1	19/2.11	75	128	57	V	"
No. 9-6 Section board	1	19/2.11	65.6	128	19	V	"
No. 9-7 Section box	1	19/2.11	67.6	128	8	V	"
No. S-5 Section box	1	7/1.12	4.43	22	6	R	"
No. S-7 Section board	1	7/1.63	12	32	12	R	"
No. 1-7 Section board	1	19/1.63	47.1	91	26	V	"
No. 1-4 Section box	1	7/1.63	10	23	12	r	"
No. S-1 Section board	1	19/1.63	53	100	1	V	"
No. S-2 Section box	1	7/1.63	22	56	4	V	"
No. S-3 Section board	1	7/1.12	11	22	15	r	"
No. S-22 Section board	1	7/1.63	31.7	56	1	V	"

MOTOR CABLES.

ALL IMPORTANT MOTORS TO BE ENUMERATED.		No.	B.H.P.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (feet)	INSULATION.	PROTECTIVE COVERING.
				No. in Parallel per Pole.	Sectional Area or No. and Dia. of Strands.	In the Circuit.	Rule.			
Steering gear	2	50	1	19/1.63	70	91	65/89	V		L.C.
Main cond. pump	2	35	1	7/1.63	42	51	19/20	V		"
Lub. oil pump	2	40	1	19/1.32	50	70	24/24	V		"
F. O. firing pump	2	17.5	1	7/1.32	22	38	21/20	V		"
Atmos. drain pump	2	20	1	7/1.32	25	38	21.5	V		"
Air compressor	1	30	1	7/1.63	41	51	46.5	V		"
C.A.S. compressor	2	15	1	7/1.32	18.5	38	46/46	V		"
Main circulating pump	1	185	1	61/2.36	272	313	27.5	V		"
Forced draft fan	2	150	1	37/2.11	175	200	30/34	V		"
Forced draft fan	2	150	1	19/2.11	175	128x2	17/17	V		"
Evap. feed pump	2	5	1	7/0.74	6.5	11	21/20	R		"
Evap. dist. pump	2	1.5	1	3/0.91	2	7	10/14	R		"
Evap. brine pump	2	1.5	1	3/0.91	2	7	8/12	R		"
Lub. oil purifier	1	1.7	1	3/0.91	2.5	7	5	R		"
Eng. turning gear	1	13	1	7/1.32	23	38	41	V		"
Thermo-tank vent. fan	3	5	1	7/0.74	6.5	15	37/16/24	R		"
Eng. room vent. fan	2	7.5	1	7/1.12	10	16	36/31	R		"
Pump room vent. fan	1	6	1	7/0.74	7.3	11	21	R		"
Sanitary pump	2	7.5	1	7/1.12	9.6	16	18/21	R		"
Bilge pump	1	3	1	3/0.91	4.05	7	28	R		"
Fresh water pump	2	2	1	3/0.91	2.71	7	38/38	R		"
Aux. gen. cool. W.P.	1	2	1	3/0.91	2.59	7	6.5	R		"
Recep. for boat winch	4	-	1	7/0.74	6	15	15-25	R		"
Fire & bilge pump	1	60	1	19/1.63	71	91	42	V		"
Aux. cond. pump	2	10	1	7/1.12	11.8	16	28	R		"
Aux. circ. pump	1	50	1	19/1.63	68	91	20	V		"
Em'cy feed water pump	1	10	1	7/1.12	12.5	16	27	R		"
Em'cy fuel oil pump	1	1.5	1	3/0.91	1.91	7	3.5	R		"
Boiler room vent. fan	2	7.5	1	7/0.91	10	19	35/21	V		"
Ref. compressor	2	10	1	7/1.12	12.4	22	11/12	R		"
Ref. cool. water pump	1	2	1	7/0.91	2.59	19	51	V		"
Start. air compressor	1	3	1	3/0.91	4	7	17	R		"
Electric baking oven	1	11 KW	1	19/1.32	28.9	70	25	V		"
Boiler compound p.	1	1/2	1	7/0.91	32	19	22	V		"

NOTE.—Use Rpt. 13 Continuation Sheet if the above space is insufficient.
All cables are three 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.

S. M. Inami

THE HARIMA SHIPBUILDING & ENGINEERING CO., LTD.

5292 Aioi, Aioi-shi, Hyogo-ken, Japan.

Electrical Contractors.

Date **NOV 24 1960**

COMPASSES.

Have the compasses been adjusted under working conditions. Yes

S. M. Inami

THE HARIMA SHIPBUILDING & ENGINEERING CO., LTD.

5292 Aioi, Aioi-shi, Hyogo-ken, Japan.

Builder's Signature.

Date **NOV 24 1960**

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 12-8-1959, 9-10-1959

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 and installed under special survey in accordance with the Rules and approved plans.

The materials and workmanship are good.

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

Total Capacity of Generators 1,625

KVA
~~Kilowatts~~

The amount of Fee ... £ 274,900/- When applied for,

19

When received,

19

Travelling Expenses (if any) £ /

Surveyor to Lloyd's Register of Shipping.

M. Ishiwatari

Committee's Minute FRIDAY 24 MAR 1961

Assigned

See Mpt. 1.

CRMS
3.2.61

5m.656—Transfer. (MADE AND PRINTED IN ENGLAND)

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

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NOTE.—The words which do not apply should be deleted.

Is a Report also sent on the Hull of the ship?

If not, state whether, and when, one will be sent.