

# REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Date of writing Report 19 When handed in at Local Office OCT. - 8 1954 Received at London Office 19 OCT 1954  
 Port of K O B E

No. in Survey held at Aioi, Japan Date, First Survey 25-12-53 Last Survey 30-6- 19 54  
 Reg. Book. 36698 on the Steel Single Screw M/V "ISE-MARU" (No. of Visits 10 )

Built at Aioi, Japan By whom built Harima Shipbuilding & Engineering Co., Ltd., Yard No. 481 Tons { Gross 13,220.70  
 Net 9,350.81  
 Owners Terukuni Kaiun K.K. Port belonging to Tokyo When built July, 54

Installation fitted by Harima Shipbuilding & Engineering Co., Ltd., When fitted July, 54

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 3 Phase 3 Wire Voltage of Lighting 110 volt

Heating 110 Volt Power 440 Volt D. C. or A. C., Lighting A. C. Power A. C. If A. C. state frequency 60 Cycle

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 -

if not compound wound state distance between generators - and from switchboard - Are the generators arranged to run in parallel Yes, are shunt field regulators provided - Is the compound winding connected to the negative or positive pole

- Have machines over 100 kw. been inspected by the Surveyors during manufacture and testing Yes Have certificates of test for machines under 100 kw. been supplied Yes and the results found as per Rule Yes

Position of Generators Both Side of Main Diesel Engine ( 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 Fore Centre in Eng. 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

For 330 KVA Generator :- 600 A Air Circuit Breaker

For 100 KVA Generator :- 200 A Air Circuit Breaker

and the switch and fuse gear (or circuit breakers) for each outgoing circuit

For All Outgoing Circuit :- Non-Fuse-Breaker

Are compartments containing switchboards composed of fire-resisting material or lined as per Rule Yes Instruments on main switchboard 10

ammeters 8 voltmeters 1 synchronising devices. For compound machines in parallel are the ammeters and reversed current protection devices connected on the pole opposite to the equaliser connection - Earth Testing, state means provided

Earth-Indicating Lamps

Switches, Circuit Breakers and Fuses, are they as per Rule Yes, are the fuses an Approved Type Yes

make of fuses Fuji Elect. Mfg. Co., Ltd., are all fuses labelled Yes If circuit breakers are provided for the generators, at what overload do they operate 50 % Over and at what current do the reversed current protective devices operate 15% Power

Joint Boxes, Section Boards and Distribution Boards, is the construction as per Rule Yes

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 5.09 Volt, are the ends of all cables having a sectional area of 0.01 square inch and above provided with soldering sockets Yes 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 Are cables in machinery spaces, galleys, laundries, etc., lead covered Yes or run in conduit -

or of the "HR" type - State how the cables are supported or protected

In Machinery Space :- Steel-Hanger

In Accommodation :- Steel-Plating

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



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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 and fitted as per Rule Yes, are they adequately ventilated Yes  
state battery capacity in ampere hours 24 V-200 Amp.-Hour 2 sets (Except Wireless equipments)

Fittings, are all fittings on weather decks, in stokeholds and engine rooms and wherever exposed to drip or condensed moisture, weatherproof Yes

Are any fittings installed where readily combustible materials or inflammable or explosive dust or gases are likely to be present Yes  
if so, how are they protected Frame Proof Fitting

and where are the controlling switches fitted Safety Compartment Bridge Deck Are all fittings suitably ventilated Yes

Searchlight Lamps, 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

Control Gear and Resistances, and they constructed and fitted as per Rule Yes Lightning Conductors, where required are they fitted as per Rule - Ships carrying Oil having a Flash Point 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 Elect. Mfg. Co., Ltd. the fittings for pump

rooms, tween deck spaces, etc., in accordance with the special requirements for such ships Yes. Are the cables lead covered as per Rule Yes

E. S. D., if fitted state maker Kaijo Denki location of transmitter Engine Room and receiver 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.	RATED AT				PRIME MOVER.	
			Kilowatts per Generator.	Volts.	Amperes.	Revs. per Min.	TYPE.	MAKER.
MAIN	2	Tokyo Shibaura	264 (330KVA)	450	424	450	6BH29 (Diesel)	Harima
AUX. <del>ROTARY TRANSFORMER</del>	1	Tokyo Shibaura	80 (100KVA)	450	128	600	8PS-18B (Diesel)	Daihatsu
ROTARY TRANSFORMER	1	Tokyo Shibaura	3	70	43	1750	A.C. 440V Drip proof induction Motor	HP Tokyo Shibaura

## GENERATOR CABLES.

DESCRIPTION.	KILOWATTS. (KVA)	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. or Sq. mm.	In the Circuit.	Rule.			
MAIN GENERATOR	264(330)	3-30	37/1.83	424	498	55	V.C.	L.S. & S.W.A.
" " EQUALISER								
AUX. <del>ROTARY TRANSFORMER</del> GENERATOR	80(100)	1-30	37/1.83	128	166	50	V.C.	L.S. & S.W.A.
ROTARY TRANSFORMER: MOTOR	5 HP	1-30	7/0.74	5.4	11	60	V.R.	" "
" " GENERATOR	3	1	19/1.63	43	130	120	"	" "

MAIN DISTRIBUTION CABLES (~~See Section Boards & Distribution Box & Rds. & etc.~~)

DESCRIPTION.								
440V Main Sw. Bd. / 20KV x 3 Transformer 115V	3-20	7/1.63	77	144	18	V.C.	L.S. & S.W.A.	
20KV x 3 Transformer 115V / 115V Main Sw. Bd.	3-20	19/2.11	174	370	16	V.C.	L.S. & S.W.A.	
440V Main Sw. Bd. / Sub Sw. Bd. (Midship)	1-30	19/2.11	100	128	250	V.C.	L.S. & S.W.A.	
440V Sub Sw. Bd. / 7.5KV x 3 Transformer 115V	3-20	7/1.63	29.5	144	6	"	"	"
7.5KV x 3 Transformer / Sub Sw. Bd. 115V	3-20	7/1.63	113	144	9	"	"	"
Shore Connection 440 V	1-30	37/2.11	200	200	106	"	"	"
Engine Room Section Box	73	"	7/1.63	40.5	51	95	"	L.S. & S.W.B.
"	74	"	7/1.63	11.9	23	90	V.R.	"
"	75	"	7/1.63	12.4	23	55	"	"
"	76	"	7/1.63	41.75	51	37	V.C.	"
"	77	"	19/1.32	50.4	70	13	"	L.S. & S.W.A.
"	78	"	7/1.63	33.6	51	85	"	L.S. & S.W.B.

DESCRIPTION.	No. in Parallel per Pole.	Sectional Area or No. and Dia. of Strands. Sq. ins. or Sq. mm.	MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (lead plus return feet)	INSULATION.	PROTECTIVE COVERING.
			In the Circuit.	Rule.			
Ref. machine Section Box 79	1-30	7/1.63	23.1	51	150	V.C.	L.S. & S.W.A.
From 115V Main Switch Board							
To Poop Acc. Lighting	1-30	19/2.11	73.8	128	37	V.C.	L.S. & S.W.B.
Navigation Lighting	1-20	7/1.63	1.8	33	250	V.R.	L.S. & S.W.A.
Navigation Instruments	1-30	7/1.63	25	51	15	V.C.	L.S. & S.W.B.
Engine Room Lighting	1-30	19/2.11	77.7	128	15	"	"
From Sub Switch Board							
To Wireless Switch Board	1-30	7/1.63	36.4	51	75	V.C.	L.S. & S.W.B.
Navigation Instruments	1-30	7/1.63	21	51	25	"	"
Acc. (Midship) Lighting	1-30	19/1.63	57.3	91	9	"	L.S. & S.W.A.
Midship Cargo Lighting	1-30	7/1.63	19.8	51	9	"	L.S. & S.W.B.
Forward Cargo Lighting	1-30	7/0.9	4.9	19	210	"	L.S. & S.W.A.
Suez Canal Projector	1-20	19/1.32	18.2	101	210	"	"

ALL IMPORTANT MOTORS TO BE ENUMERATED.		MOTOR CABLES.									
No.	B.H.P.										
Steering Gear	2	25	1-30	7/1.63	32	51	200	V.C.	L.S. & S.W.B.		
Cooling Sea Water Pump	2	50	1-30	19/1.63	60	91	63	"	L.S. & S.W.A.		
O. Booster Pump	2	7.5	1-30	7/0.9	12	19	30	"	"		
Sub. Oil Pump	3	75	"	19/2.11	102	128	85	"	"		
O. Valve C.W. Pump	2	3	"	3/0.9	4.1	10	85	"	"		
O. Transfer Pump	1	12	"	7/1.32	15.5	19	85	V.R.	"		
Boiler Fan	1	25	"	7/1.63	32	51	45	V.C.	"		
Pump Room Vent. Fan	1	10	"	7/1.32	14	19	30	V.R.	"		
Engine Room Vent. Fan	3	7.5	"	7/0.9	9.25	12	130	"	"		
Turning Gear	1	18	"	7/1.32	23.5	38	24	"	"		
Ref. Compressor	2	7.5	"	7/0.9	9.7	12	15	"	"		
Ref. C.W. Pump	1	2	"	3/0.9	2.7	10	116	V.C.	"		
Crane (Hoist)	1	7.5	"	19/1.32	60	113	97	"	"		
" (Travelling)	1	2.5									

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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.

*M. Yoshizawa*  
THE HARIMA SHIPBUILDING AND  
ENGINEERING COMPANY, LTD.

Electrical Contractors. Date

#### COMPASSES.

Have the compasses been adjusted under working conditions Yes

*M. Yoshizawa*  
THE HARIMA SHIPBUILDING AND  
ENGINEERING COMPANY, LTD.

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 14-1-54 (KOBE)

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

General Remarks. (State quality of workmanship, whether insulation tests, etc., have been made, opinions as to class, etc.)

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

The Materials and workmanship were found sound and good.

The Generators and Motors etc., have been examined under full load working condition to Rule's requirements and found satisfactory.

Total Capacity of Generators 760 KVA Kilowatts.

The amount of Fee ... £280,000 When applied for, OCT - 8. 1954

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

Committee's Minute

Assigned See Rpt. 4 C.

*S. B. Johnson & Co.*  
Surveyor to Lloyd's Register

*Takemichi*  
of Shipping.