

29 SEP 1953

Rpt. 13.

No. 1536

# REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office

27. AUG. 1953

Date of writing Report June 22nd 1953 When handed in at Local Office 1953 Port of KOBE

No. in Survey held at Aioi Japan Date, First Survey 10-2-53 Last Survey 30-6-53 (No. of Visits 18)

Reg. Book. on the Steel Single Screw S.T. "KOHO-MARU" The Harima Shipbuilding & Engineering Co., Ltd. Yard No. 477 Tons (Gross 17808.11 Net 13397.88)

Built at Aioi Japan By whom built & Engineering Co., Ltd. When built July 1953

Owners Iino Kaiun K.K. Port belonging to Tokyo Installation fitted by The Harima Shipbuilding & Engineering Co., Ltd. When fitted July, 1953.

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 Single-phase two-wire & three-phase Voltage of Lighting 110

Heating 220 Power 440V for Engine room 220V for deck 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 Synchronous Generators, are they compound wound generators, 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 Automatic Volt regulators are provided Yes 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 Generator Platform, Starboard 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

Main Switch Board Platform After 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 insulating material 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 550 KVA Main generator; 3-pole Disconnecting Switch,

3-pole circuit Breaker with overload and Reverse-Power Trips.

For 90 KVA Aux. Generator; 3-pole circuit Breaker with overload Trip.

and the switch and fuse gear (or circuit breakers) for each outgoing circuit 3-pole Non Fuse Breaker

Are compartments containing switchboards composed of fire-resisting material or lined as per Rule Yes Instrument on aux. switchboard 4 Instruments on main switchboard 17

ammeters 2 voltmeters 2 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 Electric Mfg. Co. Ltd. Tokyo Japan are all fuses labelled Yes If circuit breakers are provided for the generators, at what power overload do they operate 50 % over and at what current do the reversed current protective devices operate 105 A (15%)

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 9.56 V. 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, lavatories, etc., lead covered Yes or run in conduit Yes

of the "HR" type State how the cables are supported or protected in Machinery space : Cable protected by strong steel-iron plating

Gang way : Substantial channels of steel plate.

On deck

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. **For wireless 48V-200A.H-2sets, For Fire alarm 24V-24A.H-1sets**  
**For communication & lighting, 24V-200A.H-2sets, 70V gyro compass**

Fittings, are all fittings on weather decks, in stokeholds and engine rooms and wherever exposed to drip or condensed moisture, weather proof. **Yes**  
 Are any fittings installed where readily combustible materials or inflammable or explosive dust or gases are likely to be present. **Yes** *Lighting fitting for pump room & under bridge sto*  
 if so, how are they protected. **Flame-proof approved type**

and where are the controlling switches fitted. **in adjacent accommodation passage** Are all fittings suitably ventilated. **Yes**

Searchlight Lamps, No. of **1**, whether fixed or portable. **portable**, are they of the carbon arc or of the filament type. **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. **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**

Control Gear and Resistances, are they constructed and fitted as per Rule. **Yes** Lightning Conductors, where required are they fitted as per Rule. **Yes** 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 Electric Mfg. Co. Ltd.** Are 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 **Nihon Denki K.K.** location of transmitter **(F.No. 53-54)** and receiver **(F.No. 53-54 S.S.)**  
**Engine Room Bottom Eng. Room Bottom**  
**P.S.**

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			Revs. per Min.	TYPE.	PRIME MOVER.
			KVA Kilowatts per Generator.	Volts.	Amperes.			MAKER.
MAIN Turbo Gen...	2	Tokyo Shibaura Elec. Co., Ltd.	550	450	705	1200	Turbo Engine	Ishikawajima Heavy Industry Co., Ltd.
Aux. Gen. EMERGENCY ROTARY TRANSFORMER	1	"	90	450	115.5	600	Diesel Engine	Ito Tekkoshō

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 of Strands. Sq. ins.	In the Circuit.	Rule.			
MAIN GENERATOR	550	3	0.3	705	780	124	Varnished Cambric	Load Alloy Sheathed & Armoured
" " EQUALISER								
Aux. Generator	90	1	0.15	115.5	166	39	"	"
EMERGENCY GENERATOR								
ROTARY TRANSFORMER: MOTOR								
" " GENERATOR								

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

Section	DESCRIPTION.	No.	Sectional Area of Strands. Sq. ins.	Current in Amps.	Rule.	Length in Feet.	Insulation.	Covering.
No.6-5	Box (For Air Compressor)	1	0.0145	9.2	19	230	Rubber	"
No.6-7	" (G.S & Bilge Ballast P.)	1	0.06	59.4	91	262	V.C.	"
No.6-8	" (Evaporator)	1	"	37.05	"	105	"	"
No.6-9	" (Eng. Boil. Rm. V. F.)	1	0.04	46.25	70	92	"	"
No.7-3	" (Sanitary, F.W. P.)	1	"	57.6	"	137	"	"
No.7-4	" (Boil. Rm. Power)	1	0.0145	16.7	38	315	"	"
No.7-5	" (Red. Machine)	1	"	24.4	"	144	"	"
No.8-1	" (Battery Charge M.G)	1	0.04	26	70	1110	"	"
No.8-2	" (Eng. Rm. 220V power)	1	0.06	50.5	91	92	"	"
No.8-3	" (Mid Ship Power)	1	"	55.64	"	850	"	"
No.8-4	" (After - Power)	1	0.1	82.4	128	150	"	"
No.8-6	" (Mid ship power)	1	0.0225	37.6	51	280	"	"
	440V shore Line	1	0.2	180	200	210	"	"
	220V " "	1	"	"	"	243	"	"

MOTOR CABLES, TRANSFORMER CABLES

Accom. Vent. Fan	1	3.5	1	0.0145	9.5 ✓	19	183	R	L. & A.
"	4	3	1	0.007	8.3 ✓	12	196	"	"
"	3	2.5	1	0.007	7.3 ✓	12	196	"	"
"	1	2	1	0.0045	5.4 ✓	11	79	"	"
"	1	1.5	1	0.0045	4.7 ✓	11	79	"	"
"	3	1	1	0.0045	3.3 ✓	11	79	"	"
"	1	$\frac{1}{2}$	1	0.0045	1.7 ✓	11	124	"	"
Galley Burner Fan	2	1	1	0.0045	3.5 ✓	11	100	"	"
Laundry Mach.	2	1	1	0.0045	3.3 ✓	11	111	"	"
Lub. Oil Purifier	1	2	1	0.0145	5.1 ✓	38	85	V.C.	"
D.O. Transfer Pump	1	2	1	0.01	5.4 ✓	16	85	R	"
Engine Turning	1	13	1	0.0225	4.0 ✓	51	130	V.C.	"
Bean Curd	1	$\frac{1}{2}$	1	0.0045	1.7 ✓	11	32	R	"
Domestic Ref.	3	$\frac{1}{2}$	1	0.0045	1.6 ✓	11	100	"	"
Sounding Mach.	1	1.5	1	0.0045	5 ✓	11	130	"	"
Room Air Conditioner	6	1	1	0.007	6.9 ✓	12	130	R	"
"	5	$\frac{3}{4}$	1	0.007		12	196	"	"
Boil, Tube Cleaner	1	2	1	0.0225	11 ✓	51	300	V.C.	"
Transformer for Light.	3	20 KVA	1	0.0225	45.5 ✓	51	25	V.C.	"
" (Secondary)	115V	20 "	1	0.15	133 ✓	166	25	"	"
" for deck power	3	25 KVA	1	0.04	57 ✓	70	25	"	"
" (Secondary)	440V / 230V	25 "	1	0.1	109 ✓	128	25	"	"



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LIGHTING, HEATING, WIRELESS, NAVIGATION LIGHTS, ETC., CABLES.

DESCRIPTION.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (lead plus return feet).	INSULATION.	PROTECTIVE COVERING.
	No. in Parallel per Pole.	Sectional Area No. and Dis. of Strands. Sq. ins. or sq. mm.	In the Circuit.	Rule.			
Wireless Telegraph	1	0.0145	1010 ✓	38	100	V.C.	L. & A.
No.9-5 Nautical Instrument	1	0.06	37.4 ✓	91	920	"	"
No.9-13 Gyro-1 Auto Pilot	1	0.1	28 ✓	128	920	"	"
Pressure Log.	1	0.007	2.1 ✓	12	196	R	"
Navigation Light	1	0.0225	1.8 ✓	23	1240	R	"
Mid ship Light	1	0.15	54.4 ✓	166	920	V.C.	"
Aft. Ship Light	1	0.1	70.85 ✓	128	280	"	"
Cargo Light	1	0.15	66.9 ✓	166	280	"	"
Engine Room Light	1	0.04	60 ✓	70	170	"	"
Boiler Room Light	1	0.0145	26.8 ✓	38	250	"	"
Suez Search Light	1	0.06	18.2 ✓	91	1620	"	"
Test Board & Grinder	1	0.004 ✓	37 ✓	70	65	"	"
1.4 KW Toaster	1	0.003	6.35 ✓	27	32	R	"
1 KW Heater	1	0.003	4.5 ✓	27	32	"	"

MOTOR CABLES.

ALL IMPORTANT MOTORS TO BE ENUMERATED.	No.	B.H.P.							
Steering gear motor	2	40	1	0.04	53 ✓	70	263	V.C.	L. & A
Main condenser cir. pump	1	160	1	0.25	220 ✓	231	210	"	"
Main Lub. Oil Pump	2	55	1	0.06	78 ✓	91	280	"	"
Atmos. Drain Pump	2	25	1	0.0225	32.5 ✓	51	263	"	"
Main Condensate Pump	2	40	1	0.06	47 ✓	91	328	"	"
Fire & Bilge Pump	1	60	1	0.06	76 ✓	"	263	"	"
F.O. Transfer Pump	1	15	1	0.0225	21 ✓	51	269	"	"
Aux. Condensate Pump	2	10	1	0.0225	12.5 ✓	23	222	R	"
Aux. Cond. Cir. Pump	1	85	1	0.15	114 ✓	166	196	V.C.	"
Air Comp. for A.V.C.	2	3	1	0.0045	4.6 ✓	11	66	R	"
F.O. Firing Pump	2	15	1	0.0225	21 ✓	51	196	V.C.	"
Boil <sup>y</sup> Draft Fan	2	100	1	0.15	122 ✓	166	262	"	"
Pump Room Fan	1	40	1	0.06	47 ✓	91	396	"	"
Eng. Boil. Rm. V. Fan	5	7.5	1	0.0145	9.25 ✓	38	328	"	"
G.S. Pump	1	25	1	0.0225	33.4 ✓	51	79	"	"
Bilge & Ballast P.	1	20	1	0.0225	26 ✓	51	59	"	"
Electric Welder	1		1	0.04	12 ✓	70	210	"	"
Boring Machine	1	2	1	0.0045	2.7 ✓	11	281	R	"
Universal Lathe	1	5	1	0.007	6.4 ✓	12	275	"	"
D.O. Transt. Pump	1	1	1	0.0045	1.5 ✓	11	124	"	"
Feed Pump For Make up Evapo.	1	1	1	0.0045	1.65 ✓	11	66	"	"
Brine & Distilled W.P.	1	5	1	0.01	6.4 ✓	16	53	"	"
Feed Pump for S.W. Evapo.	1	5	1	0.007	6.4 ✓	12	53	"	"
Starting Air Comp.	1	5	1	0.007	7.6 ✓	12	118	"	"
Fresh Water Pump	2	10	1	0.0145	12.5 ✓	19	118	"	"
Sanitary Pump	2	10	1	0.0145	12.5 ✓	19	79	"	"
Ref. Mach. Compressor	2	7.5	1	0.007	9.7 ✓	12	86	"	"
Boiler Fan (cold Start)	1	2	1	0.007	2.7 ✓	12	170	"	"
F.O. Service P. (cold Start)	1	1	1	0.007	1.5 ✓	12	170	"	"
Aux. Feed Water P.	1	5	1	0.01	6.7 ✓	16	170	"	"
Oil Pump for A.C.C.	1	2	1	0.007	2.7 ✓	19	196	V.C.	"
"	1	1	1	0.007	1.8 ✓	19	196	"	"
"	1	1/2	1	0.007	1.3 ✓	19	196	"	"
M.G. For Battery Charge	2	3HP 2KW	1	0.007	8 ✓	12	242	R	"
Bridge F.W. Pump	1	1.5	1	0.0045	4.1 ✓	11	53	"	"

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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. Yoshikawa*  
 THE HARIMA SHIPBUILDING AND  
 ENGINEERING COMPANY, LTD.

Electrical Contractors. Date

COMPASSES.

Have the compasses been adjusted under working conditions Yes

*M. Yoshikawa*  
 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 Yes If so, state name of vessel YUHO -MARU

Plans. Are approved plans forwarded herewith No If not, state date of approval 19th March, 1953

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 Electrical 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 are sound and good.

The generators and motors etc. have been examined under full load working condition to the Rule's requirement and found satisfactory.

*Noted sum 2/10/53*

Total Capacity of Generators 1,190 KVA. ~~XXXXXX~~

The amount of Fee ... £323.000 When applied for, 27. AUG. 1953

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

*S. B. Johnson*  
 Surveyor to Lloyd's Register of Shipping.

Committee's Minute FRIDAY 16 OCT 1953

Assigned See Rpt Ha.

2013-10-19 Transfer. (MADE AND PRINTED IN ENGLAND.)  
 (The Surveyors are requested not to write on or below the space for Committee's Minute.)



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