

30 NOV 1953

Rpt. 13.

No. 1691

# REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office

Date of writing Report 19... When handed in at Local Office 17 NOV. 1953 Port of KOBE

No. in Survey held at Aioi, Japan Date, First Survey 13-5-53 Last Survey 29-8-53 19-53

Reg. Book. on the Steel Single Screw S.T. " DAIKYO - MARU " Tons Gross 13,224.20 Net 9,553.47

Built at Aioi, Japan By whom built Harima S.B. & E.CO., Ltd. No. 479 When built Aug. -53

Owners Daikyo Oil Co., Ltd. Port belonging to Yokkaichi

Installation fitted by Harima Shipbuilding & Engineering Co., Ltd. When fitted Aug. -53

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 Eng. room D.C. or A.C., Lighting A.C. Power A.C. If A.C. state frequency. Three wire 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 Synchronous Gen. Yes, 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 regulator 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, After in Eng. 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. Starboard 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 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 500KVA Main Generator ; 3pole Disconnecting Switch, 3-pole circuit Breaker with overload and Reverse-power trips.

For 90KVA Aux. Generator ; 3-pole circuit breaker with overload trips

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 Instruments on main switchboard 13 Aux. 9 ammeters 8 voltmeters 5 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-Elec.Mfg. Co., Ltd. Tokyo-Japan, 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. 96.5A (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. 5.5 V, are the ends of all cables having a sectional

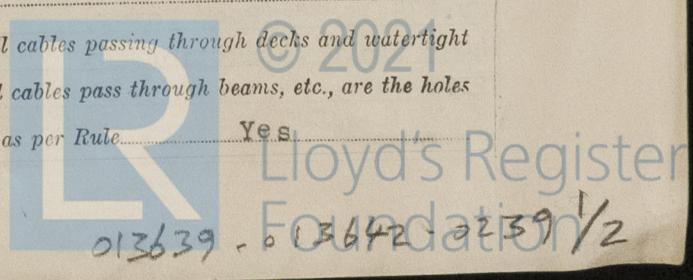
area of 0.01 square inch and above provided with soldering sockets. Yes Are ~~as per Rule~~ varnished cambric insulated cables sealed at the ends. Yes Are all the cable runs in accessible positions, not exposed to drip or accumulation of water or oil,

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. Yes

or of the "HR" type. - State how the cables are supported or protected. in machine space ; cable protected by strong steel-iron plating Gang way ; Substantial channels of steel plate.

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.....  
 For Wireless 24V-200AH-2set  
 state battery capacity in ampere hours..... For interior Communication 24V-200AH-2set

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 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 Elec. 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 Eng. room bottom and receiver Eng. room bottom  
 (F.NO. 49-50 S.S.) (F.NO. 49-50 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			PRIME MOVER.	
			K.V.A. <del>XXXXXX</del> per Generator.	Volts.	Ampères.	Revs. per Min.	TYPE.
MAIN (Turbo)	2	Tokyo Shibaura Elec. Co., Ltd.	500	450	641	1200	Turbo-Eng. Mitsubishi Heavy Ind. Reorganized Ltd.
Aux. EMERGENCY BOTARY TRANSFORMER	1	"	90	450	115.5	600	Diesel-Eng. Daihatsu kogyo

GENERATOR CABLES.

DESCRIPTION.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (lead plus return feet).	INSULATION.	PROTECTIVE COVERING.
	K.V.A.	No. in Parallel per Pole.	In the Circuit.	Rule.			
MAIN GENERATOR	500	3	641	260x3	145	Varnished cambric	Lead sheathed & Armoured
" EQUALISER							
Aux. Generator	90	1	103	128	46	"	"
EMERGENCY GENERATOR							
ROTARY TRANSFORMER: MOTOR							
" GENERATOR							

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

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.
No. 67 Section Box (G.S. & Fire P. Turning)	1	0.1	80.1	128	52.5	V.O Lead sheathed & Armoured
No. 68 " (Eng. Boiler room Vent. F.)	1	0.06	41.75	91	65.6	"
No. 73 " (Work snop Power)-	1	0.0225	27.6	51	164	"
No. 74 " (Evaporator)	1	0.0225	17.2	51	197	"
No. A21 " (Air Compressor)	1	0.0225	18.6	51	98	"
No. A22 " (ReI. Machine)	1	0.0225	24.8	51	250	"
No. A24 " (F.W. & Sanitary P.)	1	0.0225	19.2	51	131	"
No. A31 " (Midship Power)	1	0.0225	22.5	51	7250	"
No. A34 " (Poop Power)	1	0.06	41.8	91	131	"
440V shore connection Box	1	0.3	250	260	131	"
220V "	1	0.3	250	260	98	"

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 or No. and Dia. of Strands. Sq. ins. or sq. mm.	In the Circuit.	Rule.			
Navigation light	1	0.0225	1.82	33	7900	V.R	Lead sheathed & Armoured
Midship light	1	0.1	70.5	128	7250	V.O	"
After cabine light	1	0.1	99	128	131	"	"
Cargo light	1	0.06	41.3	91	131	"	"
Engine & Boiler room light	1	0.1	79	128	65.6	"	"
Nautical instrument	1	0.04	46	70	131	"	"
SUEZ search light	1	0.1	18.2	85	1180	V.R	"
Wireless telegraph	1	0.06	20	91	7580	V.O	"
Heater	1	0.0045	4.5	11	46	V.R	"
Transformer 440/230	2	0.0225	77	72x2	65.6	V.O	"
" (Secondary) 3 20KVA	2	0.06	150	130x2	65.6	"	"
Transformer 440/115	2	0.0225	77	72x2	39.4	"	"
" (Secondary) 3 20KVA	4	0.06	300	130x4	32.8	"	"

MOTOR CABLES.

ALL IMPORTANT MOTORS TO BE ENUMERATED.	No.	B.H.P.	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.			
Steering Gear	2	25	1	0.0225	40	51	394	V.O	"
Main circulating Pump	1	150	1	0.3	220	260	131	"	"
Aux. Circulating Pump	1	75	1	0.1	100	128	164	"	"
Boiler Draft Fan	2	70	1	0.1	85	128	164	"	"
F.O. Service Pump	2	7.5	1	0.01	10.5	16	111	V.R	"
F.O. Transfer Pump	1	15	1	0.0225	21	51	196	V.O	"
Lub. Oil Pump	2	35	1	0.04	45.3	70	131	"	"
Main Condensate Pump	2	30	1	0.0225	37.2	51	131	"	"
Aux. Condensate Pump	2	2	1	0.003	2.7	7	164	V.R	"
Atmos. Drain Pump	2	30	1	0.0225	37.2	51	164	V.O	"
G.S. & Fire Pump	1	50	1	0.06	60	91	46	"	"
Eng. Turning Gear	1	10	1	0.0145	15	19	98	V.R	"
L.O. Purifire	1	4	1	0.0045	5.1	11	118	"	"
Pump Room Vent. Fan	1	10	1	0.0145	14	19	96	"	"
Eng. Boiler room Vent. Fan	3	7.5	1	0.01	9.25	16	96	"	"
Electric welder	1		1	0.0225	12	51	32.8	V.O	"
Universal Lathe	1	5	1	0.0045	6.4	11	65.6	V.R	"
Boring Machine	1	2	1	0.003	2.7	7	65.6	"	"
Grinder	1	1	1	0.003	1.5	7	65.6	"	"
Evaporator Pump	1	10	1	0.0145	12.5	19	98	"	"
Evap. Brine & F.W. Pump	1	2	1	0.003	3.1	7	131	"	"
Make up Evaporator	1	1	1	0.003	1.6	7	98	"	"
Start Air Compressor	1	5	1	0.0045	7.6	11	98	"	"
Air Compressor	1	7.5	1	0.01	11	16		"	"
Ref. Mach. Compressor	2	7.5	1	0.01	9.7	16	65.6	"	"
Ref. cool Water Pump	2	2	1	0.003	2.7	7	196	"	"
Aux. Gen. Cooling Water P.	1	10	1	0.0145	12.5	19	131	"	"
Fresh Water Pump	1	5	1	0.0045	6.7	11	79	"	"
Sanitary Pump	1	10	1	0.0145	12.5	19	79	"	"
Cabin Vent. Fan	3	4	1	0.01	11	16	65.6	"	"
Bridge Fresh Water Pump	1	1.5	1	0.003	5	7	46	"	"
Laundry Machine	1	1	1	0.003	3.4	7	196	"	"
Galley Burner Fan	1	1	1	0.003	3.4	7	131	"	"
Bean Curd & Ice cream	1	1	1	0.003	3.4	7	131	"	"
Tube cleaner	1	2	1	0.01	11	16	196	"	"

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

Electrical Contractors. Date.....

COMPASSES.

Have the compasses been adjusted under working conditions..... Yes

*S. Kasuga*  
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..... If so, state name of vessel.....

Plans. Are approved plans forwarded herewith..... No If not, state date of approval..... 26th June '53 at Kobe Office

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 found sound and good.

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

2nd, 9th, 10th.—Transfer. (MADE AND PRINTED IN ENGLAND.)  
(The Surveyors are requested not to write on or below the space for Committee's Minute.)

Total Capacity of Generators..... 1090 K.V.A. ~~1100000~~

The amount of Fee ... £ 313,000. When applied for, 17. NOV. 1953

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

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

Committee's Minute..... FRIDAY 15 JAN 1954

Assigned..... See Rpt. 4a

*W. J. 8.2.53*



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