

Rpt. 13.

No. FE-8689

# REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office.

Date of writing Report 31st March, 1961 When handed in at Local Office APR - 5 1961 Port of KobeNo. in Survey held at Innoshima Date, First Survey 12th Dec., 1960 Last Survey 10th Feb. 61  
Reg. Book. (No. of Visits 8)on the Steel Single Screw M.S. "M.H. THAMRIN" Tons Gross 7,330.44  
Net 4,371.87Built at Innoshima, Japan By whom built Hitachi Shipbuilding & Eng. Co., Ltd., Innoshima Shipyard Yard No. 3902 When built Feb. 1961Owners The Government of the Republic of Indonesia Port belonging to DjakartaInstallation fitted by Hitachi Shipbuilding & Eng. Co., Ltd., Innoshima Shipyard When fitted Feb., 1961Is vessel equipped for carrying Petroleum in bulk No Is vessel equipped with D.F. Yes E.S.D. Yes Gy.C. Yes Sub.Sig. No Radar YesPlans, have they been submitted and approved Yes System of Distribution Three phase, Three wire Voltage of Lighting 110V  
insulatedCooking 440, 110 Power 440 D.C. or A.C., Lighting A.C. Power A.C. If A.C. state frequency 50  
HeatingPrime Movers, has the governing been found as per Rule when full load is thrown on and off Yes Are turbine emergency governors fittedwith 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 machinesunder 100 kw. been supplied and the results found as per Rule Yes Position of Generators Main generators (total 3 set):On lower floor port side in Engine Room. Emergency generator (1 set): in Emergency generator room  
starboard side of navigation bridge deck.is the ventilation in way of generators satisfactory Yes are they clear of inflammable material and protected from mechanical injury anddamage from water, steam and oil Yes Switchboards, where are main switchboards placed On lower floor, port sideforward 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 insulatingmaterial is it an Approved Type Yes, if of semi-insulating material (slate or marble) are all conducting parts insulated therefrom asper Rule - Is the construction as per Rule, including locking of screws and nuts Yes Description of Main Switchgearfor each generator and arrangement of equaliser switches A triple pole linked air circuit breaker provided with over current  
and reverse power protection devices, and a triple pole linked isolating knife switch.and the switch and fuse gear (or circuit breakers) for each outgoing circuit A triple pole linked "No Fuse" breaker with over  
current trip device.Are compartments containing switchboards composed of fire-resisting material or lined as per Rule Yes Instruments on main switchboard A.C. 4  
D.C. 3ammeters A.C. 4 voltmeters 1 synchronising devices. For compound machines in parallel are the ammeters and reverse currentprotection devices connected on the pole opposite to the equaliser connection - Earth Testing, state means provided Three metalfilament lamps Preference Tripping, state if provided Yes, and tested YesSwitches, Circuit Breakers and Fuses, are they as per Rule Yes, are the fuses an Approved Type Yesmake of fuses Utsunomiya Elect. Mfg. Co. are all fuses labelled Yes If circuit breakers are provided for the generators, at whatoverload do they operate Main Gen. 120% 18.5 - 22 sec. and at what current do the reverse current protective-devices operate Emergency gen. 120% 15.5 - 19.5 sec.  
- 15% (48 K.W.) Cables, are they insulated and protected as per Rule Yesif otherwise than as per Rule are they of an Approved Type Yes, state maximum fall of pressure between bus bars and any pointunder maximum load 16.5 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 Statetype of cables (if in conduit this should also be stated) in machinery spaces V.L.C. R.L.C., galleys V.L.C. R.L.C.and laundries V.L.C. R.L.C. State how the cables are supported or protected All cables generally secured by metalclips on painted steel hangers or galvanized perforated steel plates and protected by heavy gauge steel plates  
or pipes where necessary.Are all lead sheaths, armouring and conduits effectually bonded and earthed Yes Are all cables passing through decks and watertightbulkheads provided with deck tubes or watertight glands Yes, where unarmoured cables pass through beams, etc., are the holeseffectively 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 -

NOTE:- R: Vulcanized rubber insulated.  
V: Varnished cambric insulated.  
L: Lead alloy sheathed.  
C: Steel wire braided.



Lloyd's Register  
Foundation

012448-02453-0210 1/2



Alternative Lighting, are the groups of lights in the engine and boiler rooms arranged as per Rule. Yes Emergency Supply, state position 1 set of emergency generator & emergency switchboard in emergency generator room on navigation bridge deck.

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. 1 set of 24 V 200 AH for l.t.g. & internal comm. One 24 V 300 AH for eng. gen. starting

Lighting, is fluorescent lighting fitted. Yes If so, state nominal lamp voltage. 110 and compartments where lamps are fitted. 2 -dining saloons, 2-smoking rooms and main switchboard, emergency switchboards.

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. - are all fuses of an Approved Cartridge Type. - make of fuse. - Are the fittings for pump rooms, 'tween deck spaces, etc., in accordance with the special requirements for such ships. - Are all cables lead covered as per Rule. -

E.S.D., if fitted state maker. Kaijo Denki K.K. location of transmitter and receiver. Starboard side between P. Nos. 116 & 117

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.	
			Kw. per Generator	Volts.	Amps.	Revs. per Min.	TYPE.	MAKER.
MAIN	3	Mitsubishi Elect. Mfg. Co., Nagasaki Works	320	450	514	600	Diesel Eng.	Mitsubishi Nippon Heavy Ind. Co., Ltd., Yokohama Shipyard
EMERGENCY ROTARY TRANSFORMER	1	Mitsubishi Elect. Mfg. Co., Nagasaki Works	80	450	128.3	600	Diesel Eng.	Mitsubishi Nippon Heavy Ind. Co., Ltd., Yokohama Shipyard

GENERATOR CABLES.

DESCRIPTION.	No. of	Kw.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (lead included) in the Circuit.	INSULATION.	PROTECTIVE COVERING.
			No. in Parallel per Pole.	Sectional Area Sq. Ins.	Rule.	Rule.			
MAIN GENERATOR	3	320	3	0.2	533	200 x 3	12	V	L.C.
EQUALISER									
EMERGENCY GENERATOR	1	80	1	0.15	133	166	10	V	L.C.
ROTARY TRANSFORMER: MOTOR									
GENERATOR									

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

DESCRIPTION.	No. of	Kw.	CONDUCTORS.	MAXIMUM CURRENT IN AMPERES.	APPROX. LENGTH (lead included) in the Circuit.	INSULATION.	PROTECTIVE COVERING.
M.S.B.(440) to P-1 (C.O.S.) for steering	1	0.0145	27	38	108	V	L.C.
" P-2 (Fuel valve C.F.W.P.)	1	0.003	4.2	7	20	"	"
" P-3 (Aft " )	1	0.003	4.2	7	21	"	"
" P-4 (Power Panel Board)	1	0.06	48.5	91	20	"	"
" P-5 (F.O.C.W.P.)	1	0.06	75	91	28	"	"
" P-7 (Emergency switchboard)	1	0.1	125	128	52	"	"
" P-8 (L.O.P.)	1	0.0145	33	38	31	"	"
" P-10 (F.O. Supply Pump)	1	0.003	2.9	7	26	"	"
" P-12 (Starting Air Comp.)	1	0.1	114	128	13	"	"
" P-21 (Power Panel Board)	1	0.2	938	200	31	"	"
" P-24 ( " " " )	1	0.04	29	70	32	"	"
" P-34 ( " " " )	1	0.1	83	128	62	"	"
" P-41 (25 KVA Transformer 450V/220,225)	1	0.0225	32	51	12	"	"
" P-29 (25KVA Transformer 450V/110,115)	1	0.1	55.5	128	7	"	"
" (110V) (NL) Navigation light indicator	1	0.007	1.82	27	35	"	(2 core)
" (440V) P-26, Cargo winch switchboard	1	0.25	160	231	82	"	"
" (440V) P-27, " "	1	0.25	160	231	61	"	"
" (440V) P-28, " "	1	0.25	180	231	63	"	"
" (440V) Shore connection box	1	0.25	200	231	29	"	"

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

DESCRIPTION.	No. in Parallel per Pole.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH	INSULATION.	PROTECTIVE COVERING.
		Sectional Area Sq. Ins.	In the Circuit.	Rule.	Lead			
					Metres			
M.S.B.(110V) to L1 (L.T.G. Section Board)	1	0.2	126	✓	200	24	V	L.C.
" L2 ( " " )	1	0.1	74	✓	128	24	"	"
" L3 ( " " )	1	0.04	42	✓	70	24	"	"
" L11 (Dist. Panel Board)	1	0.06	22	✓	91	46	"	"
" L13 ( " " )	1	0.1	74	✓	128	41	"	"
L-1 Fa (Cabin Fan)	1	0.0145	19	✓	38	10	"	"
" Fb (Small Vent. Fan)	1	0.0145	14	✓	38	26	"	"
" Lb (Bridge Deck Light)	1	0.04	35	✓	70	24	"	"
" Lc (Promenade Deck Light)	1	0.0225	24	✓	51	10	"	"
" Ld (Shelter Deck Light)	1	0.04	48	✓	70	2	"	"
L-2 Le (F'cle Nos.1,2 Winch House Light)	1	0.04	40	✓	70	50	"	"
" Lf (No. 3 Winch House Light)	1	0.0225	21	✓	51	52	"	"
" Lg (Shelter Dk. (aft) Light)	1	0.0225	13	✓	51	101	"	"
L-3 Wa (Cargo Light (Forward))	1	0.04	23	✓	70	56	"	"
" Wb ( " " (Aft))	1	0.0225	19	✓	51	53	"	"
Emerg. S.B.(110V) to Ea (Nav. bridge light)	1	0.0145	18	✓	38	28	"	"
" Eb (Bridge Deck Light)	1	0.0145	9	✓	38	29	"	"
" Ec (Promenade Dk. Light)	1	0.0145	19	✓	38	32	"	"
" Ed (Pilgrim Space (F) Light)	1	0.0145	16	✓	38	78	"	"
" Ee ( " " Light)	1	0.0145	10	✓	38	53	"	"
" Ef (poop & shelter Dk. (A) Light)	1	0.0145	6	✓	38	102	"	"
" Eg (Engine Room Light)	1	0.0145	17	✓	38	49	"	"
" Ca (Air phone & whistle etc.)	1	0.0145	14.3	✓	38	32	"	"
" Cc (Fire Detector etc.)	1	0.0145	12.8	✓	38	42	"	"
" ENL (Navigation L. indicator)	1	0.007	1.8	✓	27	30	"	" (2 core)
" Box for Suez projector	1	0.04	18	✓	101	142	"	" (2 core)
M.S.B. (110V) to La (Nav. Bridge light & projector)	1	0.0145	19	✓	38	36	"	"

MOTOR CABLES.

ALL IMPORTANT MOTORS TO BE ENUMERATED.	No.	K.W.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (lead included) in the Circuit.	INSULATION.	PROTECTIVE COVERING.
			No. in Parallel per Pole.	Sectional Area Sq. Ins.	Rule.	Rule.			
Starting Air Compressor	2	65	1	0.1	114	128	19,19	V	L.C.
Cooling Fresh Water Pump	2	45	1	0.06	75	91	29,33	"	"
Fuel Valve Cooling Fresh W.P.	2	2.2	1	0.003	4.2	7	24,27	R	"
Cooling Salt Water Pump	1	45	1	0.06	75	91	28	V	"
Aux.C.F.W.P. & Aux. C.S.W.P.	1	11	1	0.0145	17	38	49	V	"
L. O. Pump	2	19	1	0.0145	33	38	35,35	"	"
Heavy Fuel Oil Transfer Pump	1	11	1	0.0145	19	38	23	"	"
Diesel Oil Transfer Pump	1	3	1	0.0045	5.5	11	16	R	"
Fuel Oil Supply Pump	2	1.5	1	0.003	2.9	7	31,30	"	"
Fuel Oil Purifier	3	3	1	0.0045	5	11	23,22,21	R	"
Fuel oil clarifier	2	2.2	1	0.003	4	7	19,17	R	"
L. O. Purifier	2	3	1	0.0045	5	11	15,14	"	"
L.O. Shifting Pump	1	1.5	1	0.003	2.9	7	9	"	"
Make up Fresh Water Pump	1	1.1	1	0.003	2.1	7	14	"	"
Boiler W. Forced Circulating P.	2	3	1	0.0045	4.8	11	17,16	"	"
Dist. Plant Circulating P.	1	3.7	1	0.0045	6.2	11	23	"	"
Dist. Plant Brine P. & Distillate	1	2.2	1	0.003	4.2	7	24	"	"
Bilge Pump	1	2.2	1	0.003	4	7	8	"	"
Fire & G. S. Pump	2	33	1	0.04	55	70	32,30	V	"
Ballast & Stand by Cool. S.W.P.	1	45	1	0.06	75	91	21	"	V
Emerg. Bilge & Fire Pump	1	26	1	0.0225	42	51	69	"	"
Machinery Space Vent. Fan	4	3.7	1	0.0045	7.1	11	39,18	R	"
Exhaust Fan for purifier	1	0.75	1	0.003	1.6	7	20	"	"
Fresh Water Pump	3	7.5	1	0.007	12	19	10,11	V	"
Sanitary Pump	2	7.5	1	0.007	12	19	24,29	"	"
Hot F.W. Circulating P for F.W. service	1	0.75	1	0.003	1.4	7	28	R	"
Air Cond. H.t W. Circulating P.	1	1.1	1	0.003	1.9	7	16	"	"
Provision Ref. Cool. W.P.	2	1.1	1	0.003	1.9	7	21,21	"	"
Provision Ref. Compressor	3	5.5	1	0.0045	9.5	11	19,14	"	"
Air Cond. Ref. Cool. W.P.	1	5.5	1	0.0045	9	11	31	"	"
Air Cond. Ref. Compressor	1	37	1	0.04	62	70	22	V	"
Steering Engine	2	15	1	0.0145	27	38	19,11	"	"
Windlass	1	90/64/15	1	0.15	144	128	55	"	"
Cargo Winch (5 Ton)	6	29/28/5.9	1	0.0045	60.48	70	13-23	"	"
Cargo Winch (3 Ton)	10	17/17/3.5	1	0.0145	38.32	38	19-56	"	"
Mooring Winch	1	26/26/13	1	0.04	42	51	64	"	"

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

All cables are three core type except of special noted.

Shaft Turning Gear	1	11/5.5	1	0.0145	20.5	38	23	V	L.C.
Air Cond. Forced Vent. Fan	2	5.5	1	0.0045	9.2	11	45	R	"
Hold Vent. Fan	4	3.7	1	0.0045	7.5	11	74,78	"	"
Hold Vent. Fan	6	9	1	0.007	17	19	82,78	"	"
Boat Winch	2	5.5	1	0.007	13.5	19	95,74	"	"
Boat Winch	2	11	1	0.0145	24	38	38,33	"	"

340  
30.5.66

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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.

T. Adachi

The Chief of Electric Engineering Section,  
Hitachi Shipbuilding & Eng., Co., Ltd., Innoshima Shipyard.

Electrical Contractors.

Date

#### COMPASSES.

Have the compasses been adjusted under working conditions. Yes

H. Sanji

The Chief of Engineering Division,  
Hitachi Shipbuilding & Eng., Co., Ltd., Innoshima Shipyard.

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. -

23-11-1960

26-11-1960

Plans. Are approved plans forwarded herewith. No

If not, state date of approval. 5-10-1960

5-10-1960

6-11-1960

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 this ship has been installed under Special Survey in accordance with the Society's Rules and the Approved Plans.

The materials and workmanship are sound and good.

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

Total Capacity of Generators. 1040 Kilowatts.

The amount of Fee ...

£

When applied for.

Installation

£23,000.-

19

When received,

Travelling Expenses (if any) £.

19

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

Committee's Minute

THURSDAY - 1 JUN 1961

Assigned



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