

KRE JUL 1961

Rpt. 13

No. FE-1780

REPORT ON ELECTRICAL EQUIPMENT

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Date of writing Report 10/6/1961 ~~196~~ When handed in at Local Office 19 Port of Shimonoseki Received at London Office

No. in Survey held at Hiroshima, Japan Date, First Survey 12 Oct. 1960 Last Survey 11 Feb. 1961 Reg. Book

on the M.V. "SETIABUDHI" (No. of Visits 9)

Built at Hiroshima, Japan By whom built Hiroshima Works Mitsubishi Shipbuilding & Eng. Co., Ltd. Yard No. 144 When built 1961-2

Owners The Government of the Republic of Indonesia Port belonging to Djakarta

Installation fitted by Hiroshima Works, Mitsubishi Shipbuilding & Eng. Co., Ltd. When fitted 1961-2

Is 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 Yes

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

Heating 110 Power 440 ~~D.C.~~ A.C. Lighting A.C. Power A.C. If A.C. state frequency 50 cycle

Prime Movers, has the governing been found as per Rule when full load is thrown on and off Yes ~~the turbines are compound governed fitted with 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 Port Inbd, Port Outbd, and Port Aft on Lower floor in machinery space,

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 at port of forward end on Lower floor in machinery space.

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 & bar 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 Triple pole linked in circuit breaker with instantaneous over current trip in each phase, time-delay over current trip relay induction type in the R & T phases and reverse power relay. Also fitted with triple pole linked isolating switch.

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

Moulded case thermal trip union type circuit breakers with instantaneous magnetic type over current trip made by Terasaki Denki Seisakusho, Osaka, Japan.

Are compartments containing switchboards composed of fire-resisting material or lined as per Rule Yes Instruments on main switchboard 7

ammeters 4 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 Ground de- lamps fitted for the power and lighting Preference Tripping, state if provided Yes and tested Yes

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

make of fuses Utsunomiya Mfg. Co. are all fuses labelled Yes

If circuit breakers are provided for the generators, at what overload do they operate 120% (616A) 13 second

and at what current do the reverse current protective devices operate 33 KW, 10 second

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 (400V) 16.5 (110V) 4.9 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 VLC & RLC State how the cables are supported or protected Cables of metal braided, fixed by metal clips on coated steel hanger or galvanized perforated steel plates. Cables in cargo spaces protected by steel platings.

Are all lead sheaths, armouring and conduits effectually bonded and earthed Yes

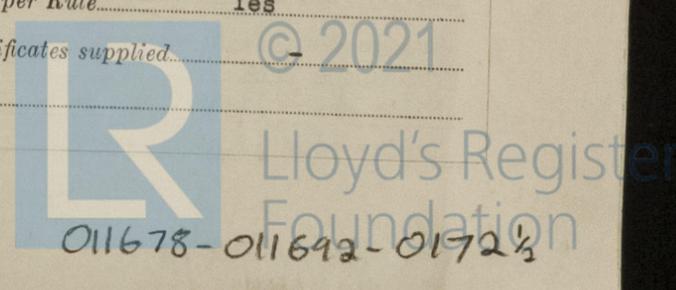
Are all cables passing through decks and watertight bulkheads provided with deck tubes or watertight glands Yes

where unarmoured cables pass through beams, etc., are the holes effectively bushed Yes

Refrigerated chambers, are the cables and fittings as per Rule Yes

Have refrigeration fan motors been constructed under survey - and test certificates supplied

Are the motors accessible for maintenance at all times Yes



Alternative Lighting, are the groups of lights in the engine and boiler rooms arranged as per Rule **Yes** Emergency Supply, state position **Yes**

Boat deck port side (Battery charging room) 24V battery units with Auto. control switch for lighting emergency generator room, Radio room, pilgrim space, machinery space.

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 300AN, 24V 200AN. Where required to do so does it comply with 1948 International Convention **Yes**

Lighting, is fluorescent lighting fitted **Yes** If so, state nominal lamp voltage 110V. and compartments where lamps are fitted Dining saloon and smoking room.

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 **One**, 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. **-** 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 **-**

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 Boilers or Diesel Engines of less than 500 H.P. 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 **KALJO DENKI CO.** location of transmitter and receiver **E.S. Compartment of No. 3 Double bottom tank, Frame Nos. 116 to 117, Y**

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
			KVA per Generator	Volts	Ampères	Revs. per Min.		
MAIN	3	Mitsubishi Electric Mfg. Co., Ltd.	400	450	514	600	YOKOHAMA MAN G8V 23.5/33A	Yokohama Shipyard & Engine Works, Mitsubishi Nippon Heavy Industries Co., Ltd.
EMERGENCY ROTARY TRANSFORMER	1	-do-	100	450	128.3	750	YOKOHAMA MAN W5V 18/22	

GENERATOR CABLES

DESCRIPTION	No. of	KVA	CONDUCTORS		MAXIMUM CURRENT IN AMPERES		APPROX. LENGTH (lead plus return)	INSULATION	PROTECTIVE COVERING
			No. in Parallel per Pole	Sectional Area or No. and Dia. of Strands Sq. ins.	In the Circuit	Rule			
MAIN GENERATOR	3	400	3	0.2 sq. in.	514	600	Fwd Inbd 3x36.5 Fwd Outbd 3x36.5 Aft 3x67	Varnished camblic lead alloy sheathed and steel wire braided cable.	
EQUALISER									
EMERGENCY GENERATOR	1	100	1	0.15 sq. in.	128.3	166	1x30.4	-do-	

MAIN DISTRIBUTION CABLES (to Auxiliary Switchboards etc.) from Emergency switch board.

DESCRIPTION	No. in Parallel per Pole	Sectional Area or No. and Dia. of Strands Sq. ins.	In the Circuit	Rule	APPROX. LENGTH (lead plus return)	INSULATION	PROTECTIVE COVERING
440 V							
Radio	1(3C)	7/0.036	6	19	30	V. Cambric	Lead alloy steel wire braided.
Gyro compass	1(3C)	7/0.029	4	11	32	Rubber	"
Transformer (7.5KVA x3)	1(3C)	7/0.052	16.7	38	10	V. Cambric	"
110 V							
Transformer (7.5KVA x3)	1(3C)	19/0.083	68.2	128	11	V. Cambric	Lead alloy steel wire braided.
Nautical equipment	1(3C)	7/0.052	14.3	38	30	"	"
Radar	1(3C)	7/0.036	9	19	29	"	"
Navigation light	1(3C)	7/0.036	1.8	19	30	"	"
Navigation bridge light		7/0.052	18	38	28	"	"
Bridge deck light		7/0.052	9	38	29	"	"
Promenade deck		7/0.052	19	38	32	"	"
Pil's space light		7/0.052	16	38	78	"	"
Engine room light		7/0.052	17	38	49	"	"

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

DESCRIPTION	No. in Parallel per Pole	Sectional Area or No. and Dia. of Strands Sq. ins.	MAXIMUM CURRENT IN AMPERES		APPROX. LENGTH (lead plus return)	INSULATION	PROTECTIVE COVERING
			In the Circuit	Rule			
A.C. 440 V							
Power panel board.	(P-4)	1(3C) 19/0.064	48.5	91	20	V. Cambric	Lead alloy steel wire braided.
"	(P-24)	1(3C) 19/0.052	29	70	32	"	"
"	(P-25)	1(3C) 19/0.052	40	70	34	"	"
"	(P-36)	1(3C) 7/0.064	28.4	51	33	"	"
"	(P-37)	1(3C) 19/0.052	55	70	14	"	"
"	(P-38)	1(3C) 7/0.064	25.8	51	32	"	"
"	(P-34)	1(3C) 19/0.083	72	128	62	"	"
"	(P-39)	1(3C) 7/0.036	6.3	19	106	"	"
"	(P-35)	1(3C) 7/0.064	49	51	64	"	"
"	(P-26)	1(3C) 37/0.093	160	231	82	"	"
"	(P-27)	1(3C) 37/0.093	160	231	61	"	"
"	(P-28)	1(3C) 37/0.093	180	231	63	"	"
A.C. 110 V							
Navigation light.	1(3C)	7/0.036	1.8	19	35	V. Cambric	Lead alloy steel wire braided.
Living quarter light.	1(3C)	37/0.083	126	225	24	"	"
Cargo light.	1(3C)	19/0.052	42	70	24	"	"
Cooking apparatus	1(3C)	19/0.064	22	91	46	"	"
Heater apparatus	1(3C)	19/0.083	74	128	41	"	"
Engine room light	1(3C)	7/0.064	34	51	7	"	"
Pil's space light	1(3C)	19/0.083	74	128	24	"	"

MOTOR CABLES

ALL IMPORTANT MOTORS TO BE ENUMERATED	No.	KW	CONDUCTORS		MAXIMUM CURRENT IN AMPERES		APPROX. LENGTH (lead plus return)	INSULATION	PROTECTIVE COVERING
			No. in Parallel per Pole	Sectional Area or No. and Dia. of Strands Sq. ins.	In the Circuit	Rule			
Fuel Valve Cooling FW Pump	2	2.2	1(3C)	3/0.036	4.2	7	24	Rubber	Lead Alloy Steel wire braided.
Lub. oil pump	2	19	1(3C)	7/0.052	33	38	35	V. Cambric	"
F.O. supply pump	2	1.5	1(3C)	3/0.036	2.9	7	30	Rubber	"
Boiler Water Forced Circ. P.	2	3	1(3C)	7/0.029	9.8	11	17	"	"
Fire & G.S. pump	2	33	1(3C)	19/0.052	55	70	32	V. Cambric	"
Starting Air Compressor	2	65	1(3C)	19/0.083	114	128	30	"	"
Ballast & Standby Cooling SW.P.	1	45	1(3C)	19/0.064	75	91	19	"	"
Cooling salt water pump	1	45	1(3C)	19/0.064	75	91	21	"	"
Cooling fresh water pump	2	45	1(3C)	19/0.064	75	91	28	"	"
Steering gear	2	15	1(3C)	7/0.052	27	38	32	"	"
Turning gear	1	5.5/11	2(3C)	7/0.052	20.5/23.5	38	115	"	"
Provision Ref. compressor	3	5.5	1(3C)	7/0.029	9.5	11	31	"	"
Provision Ref. cooling W. p.	2	1.1	1(3C)	3/0.036	1.9	7	19, 14, 16	Rubber	"
Air cond. Ref. compressor	1	37	1(3C)	19/0.052	62	70	21	"	"
Air cond. Ref. cooling W. p.	1	5.5	1(3C)	7/0.029	9	11	22	V. Cambric	"
Air cond. hot water circ. p.	1	1.1	1(3C)	3/0.036	1.9	7	31	Rubber	"
L.O. purifier	2	3	1(3C)	7/0.029	5	11	26	"	"
L.O. shifting pump	1	1.5	1(3C)	3/0.036	2.9	7	14	"	"
Bilge pump	1	2.2	1(3C)	3/0.036	4	7	9	"	"
F.O. purifier	3	3	1(3C)	7/0.029	5	11	8	"	"
F.O. clarifier	2	2.2	1(3C)	3/0.036	4	7	23, 22, 21	"	"
Heavy F.O. transfer pump	1	11	1(3C)	7/0.052	19	38	19	"	"
Desel Oil transfer pump	1	3	1(3C)	7/0.029	5.5	11	23	V. Cambric	"
Exhaust fan for purifier space	1	0.75	1(3C)	3/0.036	1.6	7	16	Rubber	"
Machinery space vent. fan	4	3.7	1(3C)	7/0.029	7.1	11	20	"	"
Air cond. forced vent. fan	2	5.5	1(3C)	7/0.029	9.2	11	30, 28	"	"
Hold vent. fan	4	3.7	1(3C)	7/0.029	6	11	23, 13	"	"
Hold vent. fan	6	9	1(3C)	7/0.029	6	11	46, 45	"	"
Emergency bilge & fire pump	1	26	1(3C)	7/0.036	15	19	74, 76	"	"
Aux. cooling FW. p. & Aux. Cool. SW. p.	1	11	1(3C)	7/0.052	17	38	78, 85	V. Cambric	"
Windlass	1	90/64/15	3(3C)	37/0.072	144	166	52, 42, 21	"	"
Mooring winch	1	26/26/13	3(3C)	19/0.052	58	70	8, 19, 15	"	"
Boat winch	2	5.5	1(3C)	7/0.036	13.5	19	69	"	"
Boat winch	2	11	1(3C)	7/0.052	29	38	95	"	"
3 Ton cargo winch	10	17/17/3.5	3(3C)	7/0.052	38	38	74	"	"
5 Ton cargo winch	6	24/28/55	3(3C)	19/0.052	60	70	33	"	"

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

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.

In S. Iwasaki
 S. IWASAKI

Electrical Contractors.

Date 29th June, 1961

General Manager, Hiroshima Works, Mitsubishi Shipbuilding & Engineering Co., Ltd.

COMPASSES

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

S. Iwasaki
 S. IWASAKI

Builder's Signature.

Date 14th June, 1961

General Manager, Hiroshima Works, Mitsubishi Shipbuilding & Engineering Co., Ltd.

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.....

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

General Remarks. (State quality of workmanship and materials, opinions as to class, etc.).....

The Electrical Equipment and Installation of this ship have been made under special survey in accordance with the requirements of the Rules, the approved plans and the Secretary's letters.

The materials and workmanship are sound and good.

All tests and trials as required by the Rules have been completed with satisfactory results.

Total Capacity of Generators..... 1300 KVA
 Kilowatts

The amount of Fee ... £ 250,500- : When applied for,
 JUL - 3 1961

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

M. Koi
 Surveyor to Lloyd's Register of Shipping
 Y. Hamada, K. Okada & M. Koi

Committee's Minute..... FRIDAY - 4 AUG 1961

Assigned.....

H. K. O. 21.7.61

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



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