

Rpt. 13.

No. 2369

# 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 NOV. 26 1954 19 Port of K O B E 13 DEC 1954

No. in Survey held at Tamano, Japan Date, First Survey 20-1-54 Last Survey 10th July, 1954  
Reg. Book. (No. of Visits 16)

90/85 on the m.v. "HOEISAN MARU" at Mitsui Shipbldg. & Engr., Co., Ltd. Tons { Gross 6952.52  
Net 3854.60  
Built at Tamano, Japan By whom built Mitsui Shipbuilding & Engineering Co., Ltd. Yard No. 581 When built July 1954  
Owners Mitsui Steamship Co., Ltd. Port belonging to Tokyo

Installation fitted by Mitsui Shipbldg. &amp; Engr. Co., Ltd., Tamano Works When fitted July 1954

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 Two conductor insulated Voltage of Lighting 220

Heating 220 Power 220 D.C. or A.C., Lighting D.C. Power D.C. If A.C. state frequency -

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 Yes, and level compounded under working conditions Yes

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 Yes Is the compound winding connected to the negative or positive pole

Negative 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 Engine room port side built seat on tank top. 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 Forward port 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 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 Triple pole, airbreak c/breakers with over-current &amp; reverse current protection and a triple-pole isolating switch.

and the switch and fuse gear (or circuit breakers) for each outgoing circuit Double pole air break c/breakers with over-current protection, for circuits rated above 300 amperes, double-pole switch &amp; fuse for circuits rated below 300 amperes. 10

Are compartments containing switchboards composed of fire-resisting material or lined as per Rule Yes Instruments on main switchboard XXXXXX  
ammeters 5 voltmeters - synchronising devices. For compound machines in parallel are the ammeters and reversed current protection devices connected on the pole opposite to the equaliser connection Yes Earth Testing, state means provided two lamps in series with mid-point earthed.

Switches, Circuit Breakers and Fuses, are they as per Rule Yes, are the fuses an Approved Type Yes make of fuses Mitsui MLK CAT. 3, are all fuses labelled Yes If circuit breakers are provided for the generators, at what overload do they operate 1533 amp. - 20 sec., and at what current do the reversed current protective devices operate 102 amp.

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 9.21, 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 armoured or run in conduit - or of the "HR" type - State how the cables are supported or protected Clipped to solid or perforated steel tray, structural steel work or wood work.

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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Foundation



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 2x24V 120AH; 1x24V 200AH; 2x8V 120AH; 1x216V 12AH; 1x150V 2AH.

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 No if so, how are they protected -

and where are the controlling switches fitted - 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 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, 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 - , 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 the cables lead covered as per Rule -

E. S. D., if fitted state maker Nippon Electric Co., Ltd. location of transmitter, Frm. No. 120 port and receiver starboard

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	3	Tokyo Shibaura Elect. Co., Ltd.	230	225	1022	425	Oil engine	Mitsui Shipbuilding & Engr. Co., Ltd.
EMERGENCY ROTARY TRANSFORMER								

#### GENERATOR CABLES.

DESCRIPTION.	KILOWATTS.	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	3x 230	2	0.6 in. <sup>2</sup>	1022	1210	*	V.C.	L.S.A.
" " EQUALISER		1	0.6 "	-	605			
						* No. 1 25 meters		
						No. 2 28 "		
						No. 3 46 "		
EMERGENCY GENERATOR								
ROTARY TRANSFORMER: MOTOR								
" " GENERATOR								

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

DESCRIPTION.							
A.C. switch board	1	0.01 sq. in.	30A	41A	✓	26 m.	V.C. L.S.A.
Power panel No. 1 (Br. instrument)	1	0.007 "	16.8	30	✓	58	" "
" No. 2 (gyro, draft gauge)	1	0.007	17.1	30	✓	40	" "
" No. 3 (acc. vent. fan)	1	0.01	26	45	✓	50	" "
" No. 4 (cargo winch)	1	0.3	302	408	✓	159	" "
" No. 5 (cargo winch)	1	0.3	302	408	✓	115	" "
" No. 6 (cargo hold vent. fan)	1	0.1	121	202	✓	110	" "
" No. 7 (cargo winch)	1	0.4	431	492	✓	120	" "
" No. 8 (cargo hold vent. fan)	1	0.1	82	202	✓	110	" "
" No. 9 (cargo winch)	1	0.25	224	363	✓	156	" "
" No. 10 (cargo hold vent. fan)	1	0.03	61	92	✓	61	" "
" No. 11 (prov. ref. machine, cargo desiccator, galley range)	1	0.04	76	101	✓	90	" "
" No. 12 (cargo ref. machine)	1	0.4	414	448	✓	25	" "
" No. 13 (Eng. rm. vent. fan)	1	0.0145	42	55	✓	24	" "
" No. 14 (Eng. rm. aux.: boiler pump boiler fan)	1	0.0145	51.4	55	✓	28	" "

#### 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.			
Power panel No. 15 (Eng. rm. aux.: tool Machine)	1	0.0145 sq. in.	39	55	✓	42	V.C. L.S.A.
" No. 16 (Eng. rm. aux.: oil purifier)	1	0.03	64	84	✓	55	" "
" No. 17 ( " F.O. transfer & daily supply pump)	1	0.06	102	130	✓	68	" "
" No. 18 (Cargo ref. machine)	1	0.04	82.6	101	✓	25	" "
Cargo light panel Nos. 1 & 2	1	0.0145	34.5	60	✓	110	" "
" " 3 & 4	1	0.0145	32.2	60	✓	108	" "
Light panel " 1, 2 & 3	1	0.1	126.6	202	✓	40	" "
" " 4, 5 & 6	1	0.0145	29.6	55	✓	36	" "
" No. 7	1	0.0225	50.1	72	✓	16	" "
Wireless S. Bd. & Battery S. Bd.	1	0.1	75	202	✓	80	" "
Navigation light	1	0.007	1	30	✓	60	" "
Shore connection box	1	0.3	400	408	✓	110	" "

#### MOTOR CABLES.

ALL IMPORTANT MOTORS TO BE ENUMERATED.	No.	B.H.P.						
Windlass motor	1	95	1	0.25 sq. in.	360A	400A	✓	180M V.C. L.S.A.
Steering gear	2	25	1	0.1	95	101	✓	202 V.C. "
Eng. rm. vent. fan	2	5	1	0.01	21	41	✓	185 V.C. "
Cargo ref. compressor	4	25	1	0.06	95	130	✓	Max. 20 "
Cool. W.P. for cargo ref.	2	4	1	0.007	17	27	✓	Max. 64 "
Brine P. Motor " " "	3	5	1	0.007	21	27	✓	18 "
Air circulat. fan " "	7	0.5	1	0.0045	2.8	11	✓	74 V.I.R. "
Main lub. oil pump	2	120	1	0.4	436	448	✓	74 V.C. "
Lub. oil shift pump	1	2	1	0.007	9	27	✓	50 "
Main air compressor	2	100	1	0.4	370	448	✓	70 "
Main fresh W. & sea W. cool. pump	3	40	1	0.1	152	185	✓	Max. 76 "
General service pump	1	40	1	0.1	152	185	✓	65 "
Ballast pump	1	40	1	0.1	152	185	✓	70 "
Fuel valve cool. oil pump	1	2	1	0.007	9	27	✓	58 "
Fuel oil circulat. pump	1	2	1	0.007	9	27	✓	61 "
Aux. air compressor	1	6	1	0.01	25	41	✓	70 "
Fuel oil transfer pump	1	20	1	0.04	77	101	✓	3 "
Fuel oil daily supply p.	1	6	1	0.01	25	41	✓	3 "
Boiler W. circulat. pump	2	3	1	0.007	13	27	✓	8 "
Burning oil pump for boiler	2	0.5	1	0.0045	2.8	11	✓	24 V.I.R. "
Forced draft fan	1	0.5	1	0.0045	2.8	11	✓	16 "
Bilge pump	1	5	1	0.007	21	27	✓	54 V.C. "
Warping winch	1	60	1	0.2	230	314	✓	190 "
Main engine turning gear	1	14	1	0.0225	55	84	✓	86 "
Fresh water pump	1	5	1	0.007	21	27	✓	74 "
Sea W. sanitary pump	1	3	1	0.007	13	27	✓	57 "
Fuel oil purifier	1	6	1	0.01	25	41	✓	15 "
Fuel oil mechanical filter	1	5	1	0.007	21	27	✓	6 "
Cleaner for F.O. mechanical filter	1	1	1	0.0045	5	11	✓	11 V.I.R. "
Aux. fresh W. & S.W. cool. pump	2	7.5	1	0.01	30	41	✓	50 V.C. "



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.

MITSUBISHI SHIPBUILDING & ENGINEERING CO., LTD., TAMANO WORKS.

*S. Tanaka*  
Senior Managing Director.

Electrical Contractors.

Date

#### COMPASSES.

Have the compasses been adjusted under

MITSUBISHI SHIPBUILDING & ENGINEERING CO., LTD., TAMANO WORKS.

*S. Tanaka*  
Senior Managing Director.

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 13th April, 1954

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 material and workmanship are sound and good.

The Electrical Installation has been examined under dock and comprehensive sea trials and found satisfactory.

*noted JS*  
*3/1/55*

Total Capacity of Generators 690 ✓ Kilowatts.

The amount of Fee ... £272 000: When applied for, OCT. 27, 1954

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

Committee's Minute TUESDAY 11 JAN 1955

Assigned See Rpt. n.l.

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



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