

Rpt. 13.

No. 2121

# REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office

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Date of writing Report 19... When handed in at Local Office MAY 27. 1954 19... Port of Kobe

No. in Survey held at Tamano, Japan Date, First Survey 23-12-53 Last Survey 24th Mar. 1954  
(No. of Visits 15)

on the m.v. "HAKONESAN MARU" Tons { Gross 6927.05  
Net 3838.75

Built at Tamano, Japan By whom built Mitsui Shipbuilding & Engineering Co., Ltd. Yard No. 580 When built Mar. 1953

Owners Mitsui Sempaku K.K. Port belonging to Tokyo

Installation fitted by Mitsui Shipbuilding & Engineering Co., Ltd., Tamano Works When fitted Mar. 1953

Is vessel equipped for carrying Petroleum in bulk. — 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 cond. insulat. Voltage of Lighting 220

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

Survey 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

Are the generators arranged to run in parallel Yes Is the compound winding connected to the negative or positive pole Negative

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 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, air-break C/breaker with over-current & 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/breaker with over-current protection for circuits rated above 300 amperes, double pole switch & fuse for circuit rated below 300 amperes

Are compartments containing switchboards composed of fire-resisting material or lined as per Rule Yes Instruments on main switchboard 10

ammeters 5 voltmeters — synchronising devices. For compound machines in parallel are the ammeters and reverse 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 Preference Tripping, state if provided No, and tested —

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 amps. — 20 sec., and at what current do the reverse current protective devices operate 102 amperes

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 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 Lead sheathed armoured, galleys Lead sheathed armoured and laundries Lead sheathed armoured 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

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

Are the motors accessible for maintenance at all times Yes

of Shipping.



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 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..... 3x24V200AH, 2x8V120AH, ampere hours 1x216V12AH, 1x150V2AH..... Where required to do so does it comply with 1948 International Convention..... Yes.....

Lighting, is fluorescent lighting fitted..... No..... If so, state nominal lamp voltage..... and compartments where lamps are fitted.....

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 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.....

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 Nippon Electric Co., Ltd. location of transmitter and receiver..... FR.120 port & 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.	
			Kw. per Generator.	Volts.	Ampères.	Revs. per Min.	TYPE.	MAKER.
MAIN	3	Tokyo Shibaura Electric Co., Ltd.	230	225	1022	425	Oil Eng.	Mitsui Shipbuilding & Engineering Co., Ltd.
EMERGENCY ROTARY TRANSFORMER								

#### GENERATOR CABLES.

DESCRIPTION.	No. of	Kw.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (lead plus return feet).	INSULATION.	PROTECTIVE COVERING.
			No. in Parallel per Cable.	Sectional Area or No. and Dia. of Strands. Sq. ins. or mm <sup>2</sup> .	In the Circuit.	Rule.			
MAIN GENERATOR	3	230	2	0.6	1022	1210✓	*	V.C.	L.S.A.
" " EQUALISER			1	0.6		605✓		"	"
EMERGENCY GENERATOR									
ROTARY TRANSFORMER: MOTOR									
" " GENERATOR									

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

DESCRIPTION.	No. of	Kw.	sq. in.	Volts.	Ampères.	Revs. per Min.	TYPE.	MAKER.
A.C. switch board	1		0.01	30A	41A✓	26 m.	V.C.	L.S.A.
Power panel No.1(Bridge instrument)	"		0.007	16.8	30✓	58	"	"
" No.2(gyro, & draft gauge)	"		0.007	17.1	30✓	40	"	"
" No.3(Acc. vent. fan)	"		0.01	26	45✓	50	"	"
" No.4(Cargo winch)	"		0.3	302	408✓	159	"	"
" No.5( " )	"		0.3	302	408✓	115	"	"
" No.6(Cargo hold vent.fan)	"		0.1	121	202✓	110	"	"
" No.7(Cargo winch)	"		0.4	431	492✓	120	"	"
" No.8(Cargo hold vent.fan)	"		0.1	82	202✓	110	"	"
" No.9(Cargo winch)	"		0.25	224	363✓	156	"	"
" No.10(Cargo hold vent.fan)	"		0.03	61	92✓	61	"	"
" No.11(Prov.ref.machine)	"		0.04	76	101✓	90	"	"
" No.12(Cargo ref.machine)	"		0.4	391	448✓	25	"	"
" No.13(Eng.rm.vent.fan)	"		0.0145	42	55✓	24	"	"
" No.14(Eng.rm.aux.-Boiler pump, boiler fan)	"		0.0145	51.4	55✓	28	"	"

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

DESCRIPTION.	No. in Parallel per Cable.	Sectional Area or No. and Dia. of Strands. Sq. ins. or mm <sup>2</sup> .	MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (lead plus return feet).	INSULATION.	PROTECTIVE COVERING.
			In the Circuit.	Rule.			
Power panel No.15 Eng.rm.aux. (machine tool)	1	0.0145	39	55✓	42	V.C.	L.S.A.
" No.16 " (purifier&filter)	"	0.03	64	84✓	55	"	"
" No.17 " (F.O.transfer & daily supply p.)	"	0.06	102	130✓	68	"	"
Cargo Lt. Panel Nos. 1 & 2	"	0.0145	34.5	60✓	110	"	"
" Nos. 3 & 4	"	0.0145	32.2	60✓	108	"	"
Light Panel Nos. 1, 2 & 3	"	0.1	126.6	202✓	40	"	"
" Nos. 4, 5 & 6	"	0.0145	29.6	55✓	36	"	"
" No. 7	"	0.0225	50.1	72✓	16	"	"
Wireless switch board & batt.s.bd.	"	0.1	75	202✓	80	"	"
Navigation light	"	0.007	1	30✓	60	"	"
Shore connection	"	0.3	400	408✓	110	"	"

#### MOTOR CABLES.

ALL IMPORTANT MOTORS TO BE ENUMERATED.	No.	B.H.P.	sq. in.	Volts.	Ampères.	Revs. per Min.	TYPE.	MAKER.
Windlass	1	95	1	0.25	360A	400A✓	180M	V.C. L.S.A.
Steering gear	2	25	"	0.1	95	185✓	216	" "
Eng. Rm. Vent. Fan	2	5	"	0.01	21	41✓	68	" "
Cargo ref. compressor	4	15	"	0.0225	59	72✓	20	" "
"	2	7.5	"	0.01	30	41✓	26	" "
Condenser cool. w. pump	2	4	"	0.007	17	27✓	72	" "
Unit cooler fan	1	4	"	0.007	17	27✓	70	" "
"	2	3	"	0.007	13	27✓	70	" "
"	2	2	"	0.007	9	27✓	58	" "
Main lub. oil pump	2	120	"	0.4	436	448✓	74	" "
Lub. oil shift. pump	1	2	"	0.007	9	27✓	50	" "
Main air compressor	2	100	"	0.4	370	448✓	70	" "
" fresh w. & sea w. cool. p.	3	40	"	0.1	152	185✓	76	" "
General service pump	1	40	"	0.1	152	185✓	65	" "
Ballast pump	1	40	"	0.1	152	185✓	70	" "
Fuel oil circulat. pump	1	20	"	0.007	9	27✓	61	" "
Aux. air compressor	1	6	"	0.01	25	41✓	70	" "
Fuel oil transfer pump	1	20	"	0.04	77	101✓	3	" "
" " daily supply pump	1	6	"	0.01	25	41✓	3	" "
Boiler w. circulat. pump	2	3	"	0.007	13	27✓	8	" "
Burning oil pump	2	0.5	"	0.0045	2.8	11✓	24	V.I.R. "
Forced draft fan	1	0.5	"	0.0045	2.8	11✓	16	" "
Bilge pump	1	5	"	0.007	21	27✓	54	V.C. "
Warping winch	1	60	"	0.2	230	340✓	190	" "
" eng. turning gear	1	14	"	0.0225	55	84✓	86	" "
" water pump	1	5	"	0.007	21	27✓	74	" "
Sea water sanitary pump	1	3	"	0.007	13	27✓	57	" "
Fuel oil purifier	1	6	"	0.01	25	41✓	15	" "
" " mechanical filter	1	5	"	0.07	21	27✓	6	" "
Cleaner for do.	1	1	"	0.0045	5	11✓	11	V.I.R. "
Lub. oil mechanical filter	1	3	"	0.007	13	27✓	14	V.C. "
Aux. fresh w. & s.w. cool. pump	2	7.5	"	0.01	30	41✓	50	" "
Fuel valve cool. oil pump	1	2	"	0.007	9	27✓	58	" "

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.

MITSUI SHIPBUILDING & ENGINEERING CO., LTD., YAMANO WORKS.

*S. Tanaka*  
Senior Managing Director.

Electrical Contractors.

Date

#### COMPASSES.

Have the compasses been adjusted under working conditions.

Yes

MITSUI SHIPBUILDING & ENGINEERING CO., LTD., YAMANO 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

12th January, 1954

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 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 deck and comprehensive sea trials and found satisfactory.

Noted 98.  
7/7/54

Total Capacity of Generators 690 ✓ Kilowatts.

The amount of Fee ...

£272.000

When applied for,  
MAY 27, 1954

When received,

Travelling Expenses (if any) £

:

:

19

FRIDAY 9 JUL 1954

Committee's Minute

Assigned

See Rpt. 4e.

*S.B. Johnson*

Surveyor to Lloyd's Register of Shipping.



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Lloyd's Register  
Foundation