

Rpt. 13.

No. 1142

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office

13 JAN 1953

Date of writing Report 22-11-1952 When handed in at Local Office 2. JAN. 1953 Port of Kobe

No. in Survey held at Tamano, Japan Date, First Survey 1st Aug. 1952 Last Survey 17th Nov. 1952
Reg. Book. (No. of Visits 8)

on the M. T. "OTOWASAN MARU" Tons Gross 12686.83 Net 7465.94

Built at Tamano, Japan By whom built Mitani S.B. & E. Co. Ltd Yard No. 569 When built Nov. 1952

Owners Mitani Senpaku K.K. Port belonging to Tokyo

Installation fitted by Mitani Shipbuilding & Engineering Co. Ltd., Tamano Works When fitted Nov. 1952

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 Two Cond. Insul. Voltage of Lighting 110

Heating 110 Power 110 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? 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? - 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? Port 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 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/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 airbreak C/Breakers with

over current protection, for circuit rated above 300 amperes. Double pole switch &

fuse for circuits rated below 300 amperes.

Are compartments containing switchboards composed of fire-resisting material or lined as per Rule? yes Instruments on main switchboard 5

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 FUJI Cartridge CAT. 3, are all fuses labelled? yes If circuit breakers are provided for the generators, at what

overload do they operate 818 (682) Amps - 10 sec. and at what current do the reversed current protective devices operate 54.5 (45.5) amperes

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 5.8 volt, 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? yes or run in conduit -

or of the "HR" type? - State how the cables are supported or protected

Clipped to solid or perforated steel tray, structured steel work or woodwork

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

Alternative Lighting, are the groups of lights in the engine and boiler rooms arranged as per Rule. *yes* Emergency Supply, state position *Upper deck, steering engine room*

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. *2 x 24V, 120AH; 1 x 32V, 200AH; 2 x 8V, 120AH; 2 x 150V, 2 AH; 2 x 108V, 24 AH*

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 type fitting*

and where are the controlling switches fitted. *adjacent accomm. space* 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. *—*

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. *—* 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 Cartridge CAT.3* 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 ELECT. CO., LTD.* location of transmitter. *FR. 189 Port* and receiver. *FR. 189 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.	Ampères.	Revs. per Min.	TYPE.	MAKER.
MAIN	2	KUROSAKI Mfg. Co., Ltd.	60	110	545	540	OIL ENGINE	MITSUBISHI S.B. & E. CO. LTD.
	1	KUROSAKI Mfg. Co., Ltd.	50	110	455	500	STEAM ENGINE	ISHII KOSAKUSHO LTD.
EMERGENCY ROTARY TRANSFORMER	1	KUROSAKI Mfg. Co., Ltd.	10	110	91	1000	OIL ENGINE	HATSUDORI SEIZO K.K.

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	60	2	0.75"	545	668	#	V.I.R.	L.S.A.
" " EQUALISER	—	1	0.75"	—	334			
		#1 = 32 m; #2 = 24 m						
	50	2	0.5"	455	480	12 m	V.I.R.	L.S.A.
	—	1	0.5"	—	240			
EMERGENCY GENERATOR	10	1	0.06"	91	130	10	V.C.	L.S.A.
ROTARY TRANSFORMER: MOTOR								
" " GENERATOR								

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

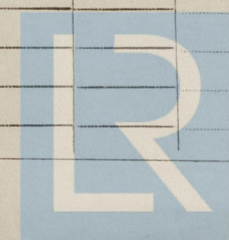
DESCRIPTION.	"						
Secondary switchboard	1	0.5	438	522	70	V.C.	L.S.A.
Shore connection box	1	0.5	400	522	70	"	"
Power panel #2 Gyro, Radar, Loran etc	1	0.3	60	174	190	V.I.R.	"
" #3 Accom. Vent. fan	1	0.03	46.2	84	40	V.C.	"
" #4 Refrig. stores	1	0.15	79	110	110	V.I.R.	"
" #5 B/R aux. (Circul. pump)	1	0.15	79	110	38	"	"
" #6 E/R Vent. fan	1	0.06	84	130	35	V.C.	"
" #7 E/R (machine tool)	1	0.06	84	130	75	"	"
" #8 E/R (Purifier & Clarifier)	1	0.1	100	185	85	"	"
" #9 E/R (")	1	0.1	102	185	80	"	"
" #10 E/R (Pumps)	1	0.04	91	108	35	"	"
" #13 Cargo Cais	1	0.3	170	174	90	V.I.R.	"

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	0.007"	1.8	27	210	V.C.	L.S.A.
Lighting panel no. 8	1	0.0225	40	72	40	"	"
" " no. 9	1	0.06	100	130	10	"	"
From secondary switchboard							
Lighting panel #1 x navigation	1	0.06	46.5	130	195	V.C.	L.S.A.
" " #2	1	0.1	55	185	185	"	"
" " #3	1	0.03	18.4	84	250	"	"
" " #4	1	0.0145	31.8	55	50	"	"
" " #5	1	0.0145	37.8	55	10	"	"
" " #6	1	0.01	21	41	55	"	"
" " #7	1	0.01	26.6	41	14	"	"
Wireless switchboard	1	0.3	80	174	200	V.I.R.	L.S.A.
Battery switchboard	1	0.0225	13	72	200	V.C.	"
Emergency switchboard	1	0.1	73	185	55	"	"
Power panel #11 (Bridge instrument)	1	0.04	26	101	200	"	"
" " #11 (Galley machine)	1	0.007	21.4	27	14	"	"
Switch box on Suez Canal search light	1	0.1	50	185	300	"	"

MOTOR CABLES.

ALL IMPORTANT MOTORS TO BE ENUMERATED.	No.	B.H.P.	MOTOR CABLES.						
			□"			M			
Turning gear	1	14	1	0.15	110	100	40	V.I.R	L.S.A
Lub. oil shifting pump	1	2	1	0.007	18	27	10	V.C	"
F.O. purifier & clarifiers	1	6	1	0.045	50	55	15	"	"
L.O. purifier	1	5	1	0.0145	42	55	14	"	"
Fuel valve Cool. oil pumps	2	2	1	0.007	18	27	16	"	"
Fresh water pump	1	4	1	0.01	35	41	6	"	"
S.W. sanitary pump	1	3	1	0.007	26	27	10	"	"
F. & S.W. Cooling pumps for Dynamo Eng. & Comp. Eng.	2	1.5	1	0.007	15	27	20	"	"
Boiler w. circulating pumps.	2	5	1	0.0145	42	55	7	"	"
Eng. Room Vent. fan	2	5	1	0.0225	42	72	50	V.C	L.S.A
Prov. Refrig. Compressor	2	7.5	1	0.0225	61	72	8	"	"
" " Cool. W. pump	1	2	1	0.01	18	41	60	"	"
Accommodation Vent. fan	1	2.5	1	0.01	22	41	195	"	"
" "	2	2	1	0.007	18	41	55	"	"
" "	1	0.5	1	0.0045	5.7	27	25	"	"
					11	30	V.I.R	"	
Fresh water pump for Galley	1	0.5	1	0.0045	5.7	11	70	V.I.R	L.S.A
Oil firing fan for Range	1	1	1	0.007	10	27	20	V.C	"
Galley Vent. fan	1	0.5	1	0.0045	5.7	11	25	V.I.R	"



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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

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

S. Tanaka
Senior Managing Director.

Electrical Contractors.

Date 17-11-52

COMPASSES.

Have the compasses been adjusted under working conditions

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

S. Tanaka
Senior Managing Director.

Builder's Signature.

Date 17-11-52

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 *24-10-1952*

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 fitted in this ship has been installed under the supervision of the Surveyors in accordance with the Society's Rules and the approved plans, tested on board under working conditions and found satisfactory. The materials and workmanship are sound and good.

Total Capacity of Generators *180* Kilowatts. (Including emergency generator)

The amount of Fee ... £ *132,000*

When applied for,

2. JAN. 1953

When received,

10

Travelling Expenses (if any) £

L. Ashwell & J. Ashwell
Surveyor to Lloyd's Register of Shipping.

Committee's Minute

TUES. 27 JAN 1953

Assigned

See Rpt. 46.



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