

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office

28 JAN 1953

Date of writing Report 19 When handed in at Local Office 12 JAN 1953 Port of Kobe

No. in Survey held at Kobe & Osaka Date, First Survey 2/1-1-52 Last Survey 3-9-1952
Reg. Book. (No. of Visits 30)on the Steel Single Screw M.T. CALIFORNIA MARU (EX KYAKUTO MARU) Tons Gross 10510.31
Built at Kobe, Japan By whom built Co., Ltd., Kobe yard Yard No. 78 When built 12/34
Owners Nippon Oil Tanker Co. Ltd. Port belonging to Tokyo

Installation fitted by Hitachi S.B. & Eng. Co. Ltd. Sakurajima ship yard When fitted 9/52

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. none Radar yes

Plans, have they been submitted and approved yes System of Distribution 2 wire system Voltage of Lighting 110 V

Heating Power 220 V 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 Frame No. 38 ~ 50 Starboard lower floor in Engine room

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 Frame No. 49 ~ 50

Starboard side upper floor 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 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 2 triple pole linked air circuit breaker (Two poles for main

with overload & reverse current trips arranged with equalizer circuit being closed before main

circuit and opened after main circuits and a triple pole linked switch

and the switch and fuse gear (or circuit breakers) for each outgoing circuit Generally double pole linked switch with a

fuse on each pole is used for each outgoing circuit, and double pole linked air circuit breaker

with overload trips for steering gear circuits and for circuits above 300 A

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 reversed current

protection devices connected on the pole opposite to the equaliser connection yes Earth Testing, state means provided 2 - earth

lamps with metal filament

Switches, Circuit Breakers and Fuses, are they as per Rule yes, are the fuses an Approved Type yes (Fuji plug type)

make of fuses Fuji Electric MFG Co Ltd, are all fuses labelled yes If circuit breakers are provided for the generators, at what

overload do they operate 150% and at what current do the reversed current protective devices operate 15%

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 P for paper 2 P for varnished 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 yes

or of the "HR" type State how the cables are supported or protected Generally supported by metal clips and

protected by lead alloy sheathing with armouring In engine room carried on galvanized

perforated plating; where exposed to mechanical damage protected by strong steel

plating; in engine room also lead plate in conduit

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 (Permissible use)

Alternative Lighting, are the groups of lights in the engine and boiler rooms arranged as per Rule... yes ^{auxiliary} Emergency Supply, state position From No 23-26 starboard lower floor in 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 x 200 H.A

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 approved by authority and where are the controlling switches fitted... from engine & bridge deck 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... — 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, are they constructed and fitted as per Rule... yes Lightning Conductors, where required are they fitted as per Rule... yes 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... Engel's Electric Works Ltd Are the fittings for pump rooms, 'tween deck spaces, etc., in accordance with the special requirements for such ships... yes Are the cables lead covered as per Rule... yes

E.S.D., if fitted state maker... Nippon Electric Co Ltd location of transmitter... From No 18-20 and receiver... Chart room

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 ...	3	Kawasaki Dockyard	295	230	1282	395	Diesel	Kawasaki Dock yard
(These 3 generators were previously used & re-used)								
Auxiliary	1	Kawasaki MFG. Co.	30	230	130	750	Diesel	Niigata Hon warner
EMERGENCY ROTARY TRANSFORMER	2	Kawasaki MFG. Co.	20	115	174	1800	Motor	Kawasaki MFG. Co.

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.				
MAIN GENERATOR ...	295	2	7/0.103	1282	73A x 2	25	Lead covered and steel armoured
" " EQUALISER ...	295	1	7/0.103	43	43	"	"
" " EQUALISER ...	295	2	7/0.103	1282	73A x 2	99	"
" " EQUALISER ...	295	1	7/0.103	49	49	"	"
" " EQUALISER ...	295	2	7/0.103	1282	73A x 2	138	"
" " EQUALISER ...	295	1	7/0.103	69	69	"	"
EMERGENCY GENERATOR ...	30	1	37/0.103	130	194 A	210	Rubber
ROTARY TRANSFORMER: MOTOR	20	1	37/0.083	122	133 A	46	"
" " GENERATOR...	20	1	37/0.103	174	174 A	46	"

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

DESCRIPTION.	No. in Parallel per Pole.	Sectional Area or No. and Dia. of Strands. Sq. ins. or sq. mm.	MAXIMUM CURRENT IN AMPERES.	APPROX. LENGTH (lead plus return feet).	INSULATION.	PROTECTIVE COVERING.
From main switch Board to Motor generator panel	1	6/0.103	210	240 A	64	Lead covered and steel armoured
" To Turbo Blower Controlling panel	2	12/0.103	1800	900 x 2	64	"
" To Shore Connection Box	1	6/0.103	200	240 A	111	Rubber
" To power Distribution Box P1	1	7/0.064	25	33	52	"
" To " " P2	1	7/0.064	25	33	188	"
" To " " P3	1	37/0.072	94	110	64	"
" To " " P4	1	19/0.052	35	46	163	"
" To " " P5	1	37/0.072	82	110	215	"
" To " " P6	1	19/0.052	40	46	132	"
" To " " P7	1	19/0.052	27	46	132	"
" To " " P8	1	19/0.064	27	60	130	"
" To Charging Board	1	19/0.064	29	60	130	"
From Aux S.B. to Lighting section Box L1	1	37/0.072	78	110	163	"
" " " L2	1	19/0.083	60	85	49	"
From charging board to lighting sec Box R1	1	19/0.083	23	85	163	"

LIGHTING, HEATING, WIRELESS, NAVIGATION LIGHTS, ETC., CABLES.

DESCRIPTION.	No. in Parallel per Pole.	Sectional Area or No. and Dia. of Strands. Sq. ins. or sq. mm.	MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (lead plus return feet).	INSULATION.	PROTECTIVE COVERING.
			In the Circuit.	Rule.			
From Aux S.B. to signal light Distri Box S.D.	1	7/0.064	36	60	524	Rubber	Lead covered and steel armoured
" To Navigation Indicator	1	7/0.064	2	33	693	"	"
" To Nautical Instrument L.A.	1	7/0.064	21	33	693	"	"
" To Lighting Distribution Box Lg	1	19/0.064	58	60	49	"	"
" To Shore Connection Box	1	6/0.103	200	240	85	"	"
From Lighting Section Box L1							
" To Lighting Distribution Box Lb	1	20/0.036	14	17	33	"	"
" To " " Lc	1	20/0.044	17	22	13	"	"
" To " " Wa	1	20/0.036	14	17	263	"	"
" To " " Wb	1	7/0.064	33	33	13	"	"
From Lighting Section Box L2							
" To Lighting distribution Box Ld	1	20/0.044	18	22	616	"	"
" To " " Lf	1	7/0.064	30	33	99	"	"
" To " " Le	1	20/0.036	13	17	75	"	"
From Lighting Section Box R1							
" To Lighting distribution Box Rc	1	20/0.044	4	22	132	"	"
" To " " Rb	1	20/0.044	9	22	66	"	"
From Charging Board							
" To Communication Box Ra	1	20/0.036	11	17	165	"	Lead covered
" To " " Ca	1	20/0.064	18	33	524	"	Lead covered and steel armoured
" To " " Ci	1	20/0.064	22	33	66	"	Lead covered
From Power Section Box P7							
" To power distribution Box Pa	1	20/0.029	5	11	66	"	"
" To " " Pb	1	20/0.029	4	11	82	"	"
" To " " Pc	1	20/0.036	6	17	462	"	Lead covered and steel armoured
From main switch Board to Wireless- Telegraph switch Board	1	37/0.072	45	110	576	"	"

MOTOR CABLES.

ALL IMPORTANT MOTORS TO BE ENUMERATED.	No.	B.H.P.							
Turbo blower	2	470	2	12/0.103	1800	900 x 2	36	Varnished Cambric	Lead covered and steel armoured
Fresh water Cooling pump	1	95	1	6/0.093	352	448	117	"	"
Sea water Cooling pump	1	95	1	6/0.093	352	448	126	"	"
Common Reserve pump	1	95	1	6/0.093	352	448	122	"	"
Lubricating oil pump	2	40	1	37/0.103	150	174	242	Rubber	"
Bilge & Ballast pump	1	25	1	37/0.072	99	110	234	"	"
General Service pump	1	12	1	19/0.064	47	60	177	"	"
Fire & Sanitary pump	1	6	1	7/0.052	26	27	66	"	"
Fresh water pump	1	2	1	20/0.029	9	11	93	"	"
Fuel oil Transfer pump	2	5	1	7/0.052	22	27	79	"	"
Fuel oil Service pump	2	3	1	20/0.036	12	17	60	"	"
Tanning gear	1	20	1	19/0.083	80	85	263	"	"
Port Service Cooling pump	1	15	1	19/0.083	60	85	99	"	"
Fuel oil purifier	2	3	1	20/0.036	13	17	33	"	"
Lubricating oil purifier	2	3	1	20/0.036	13	17	36	"	"
Lifting gear	1	5	1	7/0.052	22	27	165	"	"
Tolling machine	1	3	1	20/0.036	13	17	210	"	"
Refrigerating machine	2	7/2	1	19/0.052	32	46	60	"	"
De Cooling pump	2	2	1	20/0.029	9	11	132	"	"
Boiler room Ventilating fan	1	3	1	20/0.036	13	17	330	"	"
Engine room Ventilating fan	2	5	1	7/0.052	22	27	165	"	"
Quater Ventilating fan	3	3	1	20/0.036	13	17	405	"	"
Motor generator	2	32	1	37/0.083	132	133	46	"	"
Steering gear	1	20	1	37/0.072	80	110	322	"	"

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.

Hitachi Shipbuilding &

Engineering Co., Ltd. Sakurajima Shipyard

Electrical Contractors.

Date

COMPASSES.

Have the compasses been adjusted under working conditions

Hitachi Shipbuilding & Engineering
Co., Ltd. Sakurajima Shipyard

Builder's Signature.

Date

Have the foregoing descriptions and schedules been verified and found correct

Is this installation a duplicate of a previous case

Plans. Are approved plans forwarded herewith

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

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 and repaired under Special Survey in accordance with the Rules, approved Plans and Secretary's letters.

Materials were found to be sound & free from defects and the workmanship is good.

The Generators & Motors etc. have been examined under full load working conditions to Rules' requirements and found satisfactory.

Notes sent 6/2/53

Total Capacity of Generators 915 Kilowatts.

The amount of Fee ...

£ 295.500/-

When applied for,

12/1 1959

When received,

Travelling Expenses (if any) £

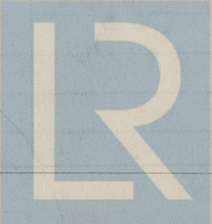
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Surveyor to Lloyd's Register of Shipping.

Committee's Minute

Assigned

See minute on Vol 12115



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