

Rpt. 13.

No. 8656

REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office 23 JUL 1934

Date of writing Report 19 When handed in at Local Office 19 Port of K O B E

No. in Survey held at KOBE. Date, First Survey 24-3-34. Last Survey 22-6-1934.
Reg. Book. (Number of Visits 8)

on the MOTOR VESSEL "TOR MARU."

Tons { Gross 10052.
Net 9038.

Built at KOBE By whom built KAWASAKI DOCKYARD Co. Yard No. 572 When built 1934.

Owners IINO SHOJI KABUSHIKI KAISHA. Port belonging to NAKAMAIZURU.

Electric Light Installation fitted by KAWASAKI DOCKYARD Co. Contract No. 205. When fitted 1934.

Is the Vessel fitted for carrying Petroleum in bulk YES.

System of Distribution

D. C. TWO WIRE.

Pressure of supply for Lighting 220 volts, Heating 220 volts, Power 220 volts.

Direct or Alternating Current, Lighting DIRECT Power DIRECT.

If alternating current system, state frequency of periods per second ✓

Has the Automatic Governor been tested and found efficient when the whole load is suddenly thrown on or off YES.

Generators, do they comply with the requirements regarding rating YES, are they compound wound YES.

are they over compounded 5 per cent. YES, if not compound wound state distance between each generator ✓

Where more than one generator is fitted are they arranged to run in parallel YES, is an adjustable regulating resistance fitted in

series with each shunt field YES.

Are all terminals accessible, clearly marked, and furnished with sockets YES, are they so spaced or shielded that they cannot be accidentally earthed,

short circuited, or touched YES. Are the lubricating arrangements of the generators as per Rule YES.

Position of Generators STARBOARD SIDE ENGINE ROOM.

is the ventilation in way of the generators satisfactory YES, are they clear of all inflammable material YES.

if situated near unprotected woodwork or other combustible material, state distance of same horizontally from or vertically above the generators

✓ and ✓, are the generators protected from mechanical injury and damage from water, steam or oil YES.

are their axes of rotation fore and aft YES.

Earthing, are the bedplates and frames of the generating plant efficiently earthed YES, are the prime movers and

their respective generators in metallic contact YES.

Main Switch Boards, where placed FORWARD END OF ENGINE ROOM, CENTRE, MIDDLE PLATFORM.

If the generators and main switchboard are not placed in the same compartment, is each generator provided with a fuse on each insulated pole as near as possible to the terminals of the generator, additional to that provided on the main switchboard ✓

Switchboards, are they placed in accessible positions, free from inflammable gases and acid fumes YES.

are they protected from mechanical injury and damage from water, steam or oil YES, if situated near unprotected

woodwork or other combustible material, state distance of same horizontally from or vertically above the switchboards ✓ and ✓.

are they constructed wholly of durable, non-ignitable non-absorbent materials. YES, is all insulation of high dielectric strength and of

permanently high insulation resistance YES, if semi-insulating material is used, are all conducting parts insulated from the slab

with mica or micanite or other non-hygroscopic insulating material, and the slab similarly insulated from its framework ✓.

and is the frame effectively earthed YES. Are the fittings as per Rule regarding:— spacing or shielding of live parts

YES, accessibility of all parts YES, absence of fuses on back of board YES, proportion of omnibus

bars YES, individual fuses to voltmeter, pilot or earth lamp YES, connections of switches YES.

Main Switchgear, description of switchgear for each generator and each outgoing circuit, and arrangement of equalizer switches EACH GENERATOR CIRCUIT HAS A TRIPLE POLE SINGLE THROW SWITCH WITH AUTOMATIC OVERLOAD AND REVERSE CURRENT RELAYS. THE CENTRE POLE OF THE SWITCH BEING FOR EQUALIZING CONNECTION. ON EACH OUTGOING CIRCUITS TO TURBO-BLOWERS COOLING WATER PUMPS ARE PROVIDED WITH DOUBLE POLE SINGLE THROW SWITCH, A SINGLE POLE AUTOMATIC OVERLOAD CIRCUIT BREAKER AND AMMETER. OTHER POWER MOTORS HAVE DOUBLE POLE SINGLE THROW SWITCH WITH SAFETY CUT OUTS.**Instruments on main switchboard** 6 ammeters 4 voltmeters ✓ synchronising device for paralleling purposes.**Earth Testing**, state what means are provided at the main switchboard for indicating the state of the insulation of the system EARTH LAMP WITH A SINGLE

POLE SINGLE THROW SWITCH ON EACH POLE.

Switches, Circuit Breakers and Fusible Cut-outs, do these comply with the requirements of the Rules YES.**Joint Boxes Section and Distribution Boards**, is the construction, protection, insulation, material, and position of these as per rule YES.

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Foundation

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Cables: Single, twin, concentric, or multicore SINGLE are the cables insulated and protected as per Tables IV or V of the Rules YES.

Fall of Pressure, state maximum between bus bars and any point of the installation under maximum load 5% APPROXIMATE.

Cable Sockets and other connections, are the ends of all cables having a sectional area of 0.04 square inch and above provided with soldering sockets YES.

Paper Insulated Cables. If cables are paper covered, is the dielectric at the exposed ends of the conductor protected from moisture by being suitably sealed with insulating compound YES.

Cable Runs, are the cables fixed as far as possible in accessible positions not exposed to drip or accumulation of water or oil, or to high temperature from boilers, steam pipes, uptakes or other hot objects, or to avoidable risk of mechanical damage YES.

Support and Protection of Cables, state how the cables are supported and protected CABLES ARE SECURED WITH STRONG BRASS CLIPS (ROUNDED EDGE) AND PROTECTED BY SHEET IRON PLATING.

If cables are run in wood casings, are the casings and caps secured by screws ✓, are the cap screws of brass ✓, are the cables run in separate grooves ✓. If armoured and lead covered cables are secured by metal clips, are the clips spaced as per Table VIII YES.

Refrigerated Chambers, if lights are fitted, are the cables and fittings in accordance with the special requirements YES.

Joints in Cables, state if any, and how made, insulated, and protected NONE.

Watertight Glands and Deck Tubes, are all cables passing through decks and watertight bulkheads provided with deck tubes or watertight glands YES.

Bushes in Beams and Non-watertight Partitions, where unarmoured cables pass through beams and non-watertight partitions, are the holes efficiently bushed YES state the material of which the bushes are made LEAD.

Earthing Connections, state what earthing connections are fitted and their respective sectional areas ✓.

are their connections made as per Rule ✓.

Alternative Lighting, are the groups of lights in the propelling machinery space arranged as per Rule YES.

Emergency Supply, state position and method of control of the emergency supply and how the generator is driven 20KW. D.C. GENERATOR DRIVEN BY DIESEL ENGINE ON STARBOARD SIDE ENGINE ROOM AFT END. CONTROLLED IN ENGINE ROOM.

Navigation Lamps, are these separately wired YES, controlled by separate switch and separate fuses YES, are the fuses double pole YES, are the switches and fuses grouped in a position accessible only to the officers on watch YES, has each navigation lamp an automatic indicator as per Rule YES.

Secondary Batteries, are they constructed and fitted as per Rule YES.

Fittings, are all fittings on weather decks, in stokeholds and engine rooms and wherever exposed to drip or condensed moisture, watertight YES, are any fittings placed in spaces in which goods are liable to be stacked in close proximity to them; if so, how are they protected ✓.

are any fittings placed in spaces where inflammable or explosive dust or gases are liable to be present, if so, how are they protected GAS PROOF FITTINGS, WITH SUBSTANTIAL GUARDS., how are the cables led ✓.

where are the controlling switches situated OUTSIDE COMPARTMENTS.

Searchlight Lamps, No. of ONE, whether fixed or portable PORTABLE, are their fittings as per Rule YES.

Arc Lamps, other than searchlight lamps, No. of NONE, are their live parts insulated from the frame or case ✓, are their fittings as per Rule ✓.

Motors, are their working parts readily accessible YES, are the coils self-contained and readily removable for replacement YES, are the brushes, brush holders, terminals and lubricating arrangements as per Rule YES, are the motors placed in well-ventilated compartments in which inflammable gases cannot accumulate and clear of all inflammable material YES, are they protected from mechanical injury and damage from water, steam or oil YES, are their axes of rotation fore and aft YES, if situated near unprotected woodwork or other combustible material, are the motors of the totally enclosed, pipe ventilated, forced draught, drip or flame proof type ✓, if not of this type, state distance of the combustible material horizontally or vertically above the motors ✓ and ✓.

Control Gear and Resistances, are the generator field and motor speed regulators, starters and controllers constructed and fitted as per Rule YES.

Lightning Conductors, where lightning conductors are required, are these fitted as per Rule ✓.

Ships carrying Oil having a Flash Point less than 150° F. Have the special requirements of the Rules been complied with regarding switches, joint boxes, section and distribution boards, protection of cables, method of distribution, lead of cables, lights and fittings NONE.

If portable lamps for use in dangerous spaces are supplied, are they of a type approved by the Home Office ✓.

PARTICULARS OF GENERATING PLANT.

DESCRIPTION OF GENERATOR.	No. of	RATED AT				DRIVEN BY	WHERE DRIVEN BY AN INTERNAL COMBUSTION ENGINE	
		Kilowatts.	Volts.	Amperes.	Revs. per Min.		Fuel Used.	Flash Point of Fuel.
MAIN	3	295.	230.	1283.	375.	DIESEL ENGINE.	HEAVY OIL.	113°c.
AUXILIARY								
EMERGENCY	1.	20.	225.	89.	450.	DIESEL ENGINE.	HEAVY OIL.	113°c.
ROTARY TRANSFORMER								

GENERATOR, LIGHTING AND HEATING CONDUCTORS.

DESCRIPTION.	CONDUCTORS.		COMPOSITION OF STRAND.		TOTAL MAXIMUM CURRENT. AMPERES.		Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED.
	No. per Pole.	Total Effective Area per Pole Sq. Ins.	No.	Diameter.	In Circuit.	Rule.			
MAIN GENERATOR	2.	1.62.	167.	0.079.	1283.	1476.	120.	PAPER.	LEAD COVERED & ARMoured.
EQUALISER CONNECTIONS	1.	0.81.	167.	0.079.	6415.	738.	60.	PAPER.	LEAD COVERED & ARMoured.
AUXILIARY GENERATOR	✓								
EMERGENCY GENERATOR	1.	0.0789.	80.	0.0354.	89.	97.	200.	RUBBER.	LEAD COVERED & ARMoured.
ROTARY TRANSFORMER	✓								
ENGINE ROOM	1.	0.0093.	12.	0.0315.	18.3.	31.	20.	RUBBER.	LEAD COVERED & ARMoured.
BOILER ROOM									
AUXILIARY SWITCHBOARDS									
MAIN & AUX SWITCHBOARDS CONNECTED BY COPPER BAR 4"x1/4" per pole.									
ACCOMMODATION									
FORECASTLE	1.	0.0093.	12.	0.0315.	16.1.	31.	180.	RUBBER.	LEAD COVERED & ARMoured.
BRIDGE	1.	0.0093.	12.	0.0315.	13.5.	31.	160.	RUBBER.	LEAD COVERED & ARMoured.
POOP	1.	0.0093.	12.	0.0315.	23.2.	31.	50.	RUBBER.	LEAD COVERED & ARMoured.
WIRELESS	1.	0.0364.	37.	0.0354.	20.	64.	600.	RUBBER.	LEAD COVERED & ARMoured.
SEARCHLIGHT	1.	0.0789.	80.	0.0354.	70.	97.	650.	"	" " " "
MASTHEAD LIGHT	1.	0.0030.	1.	0.0640.	0.4.	12.9.	300.	"	" " " "
SIDE LIGHTS	1.	0.0030.	1.	0.0640.	0.4.	12.9.	50.	"	" " " "
COMPASS LIGHTS	1.	0.0030.	1.	0.0640.	0.4.	12.9.	10.	"	" " " "
POOP LIGHTS	1.	0.0030.	1.	0.0640.	0.4.	12.9.	400.	"	" " " "
CARGO LIGHTS	1.	0.00661.	234.	0.0060.	1.1.	6.6.	250.	"	HARD RUBBER.
ARC LAMP	1.	0.0054.	7.	0.0315.	2.3.	18.2.	160.	"	LEAD COVERED & ARMoured.
HEATERS	1.	0.0054.	7.	0.0315.	2.5.	18.2.	50.	"	LEAD COVERED & ARMoured.

MOTOR CONDUCTORS.

DESCRIPTION.	No. of Motors.	CONDUCTORS.		COMPOSITION OF STRAND.		TOTAL MAXIMUM CURRENT. AMPERES.		Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED.
		No. Per Pole.	Total Effective Area per Pole Sq. Ins.	No.	Diameter.	In Circuit.	Rule.			
BALLAST PUMP	✓									
MAIN BILGE LINE PUMP	1.	1.	0.1068.	61.	0.0440.	95.	118.	200.	RUBBER.	LEAD COVERED & ARMoured.
GENERAL SERVICE PUMP	1.	1.	0.0364.	37.	0.0354.	48.	64.	180.	"	" " " "
EMERGENCY BILGE PUMP	✓									
FIRE & SANITARY PUMP	1.	1.	0.0093.	12.	0.0315.	25.	31.	120.	"	" " " "
CIRC. SEA WATER PUMPS	1.	1.	0.6185.	127.	0.0790.	350.	384.	100.	"	" " " "
CIRC. FRESH WATER PUMPS	2.	1.	0.6185.	127.	0.0790.	350.	384.	110.	"	" " " "
AIR COMPRESSOR	✓									
FRESH WATER PUMP	1.	1.	0.0054.	7.	0.0315.	9.	18.2.	180.	"	" " " "
ENGINE TURNING GEAR	1.	1.	0.0789.	80.	0.0354.	78.	97.	200.	"	" " " "
ENGINE REVERSING GEAR										
LUBRICATING OIL PUMPS	2.	1.	0.2036.	85.	0.0512.	150.	184.	150.	"	" " " "
OIL FUEL TRANSFER PUMP	2.	1.	0.0093.	12.	0.0315.	21.	31.	10.	"	" " " "
WINDLASS	✓									
WINCHES, FORWARD	✓									
TURBO BLOWER	2.	3.	0.6185.	127.	0.0790.	1770.	1872.	100.	PAPER.	" " " "
WINCHES, AFT	✓									
AUX. COOLING WATER PUMP	1.	1.	0.0364.	37.	0.0354.	59.	64.	50.	RUBBER.	" " " "
STEERING GEAR—										
(a) MOTOR GENERATOR	✓									
(b) MAIN MOTOR	1.	1.	0.0789.	80.	0.0354.	77.	97.	300.	"	" " " "
WORKSHOP MOTOR	1.	1.	0.0093.	12.	0.0315.	22.	31.	200.	"	" " " "
VENTILATING FANS	2.	1.	0.0093.	12.	0.0315.	22.	31.	150.	"	" " " "
OIL FUEL SERVICE PUMP	2.	1.	0.0054.	7.	0.0315.	13.	18.	10.	"	" " " "
OIL FUEL PURIFIER	2.	1.	0.0054.	7.	0.0315.	13.	18.	30.	"	" " " "
NOZZLE COOLING PUMP	1.	1.	0.0054.	7.	0.0315.	8.	18.	70.	"	" " " "
LUBRICATING OIL PURIFIER	2.	1.	0.0054.	7.	0.0315.	8.	18.	150.	"	" " " "
HUOST MOTOR	1.	1.	0.0093.	12.	0.0315.	20.	31.	30.	"	" " " "
REFRIGERATING MACHINE	2.	1.	0.0054.	7.	0.0315.	12.5.	18.	160.	"	" " " "
SUPPLY GALLEY OIL BURNERS	1.	1.	0.0054.	7.	0.0315.	4.	18.	80.	"	" " " "

All Conductors are of annealed copper conforming to British Standard Specification No. 7.

The Insulated Conductors are guaranteed to withstand the immersion and resistance tests specified in the Rules.

The foregoing is a correct description.

H. Tanaka

Electrical Engineers.

Date **3-7-34**

COMPASSES.

Distance between electric generators or motors and standard compass **MAIN GENERATORS 250 FT. WIRELESS GENERATOR 55 FT.**

Distance between electric generators or motors and steering compass **MAIN GENERATOR 240 FT.**

The nearest cables to the compasses are as follows:—

A cable carrying **5** Ampères **24** feet from standard compass **18** feet from steering compass.

A cable carrying **77** Ampères **✓** feet from standard compass **15** feet from steering compass.

A cable carrying **20** Ampères **55** feet from standard compass **✓** feet from steering compass.

Have the compasses been adjusted with and without the electric installation at work at full power **YES**

Has the effect of switching on and off circuits, motors and other electro-magnetic apparatus within the vicinity of the compasses been noted **NO**

The maximum deviation due to electric currents was found to be **✓** degrees on **✓** course in the case of the standard compass, and **✓** degrees on **✓** course in the case of the steering compass.

H. Tanaka

Builder's Signature.

Date **3-7-34**

Is this installation a duplicate of a previous case **NO**. If so, state name of vessel **✓**

General Remarks (State quality of workmanship, opinions as to class, &c.)

The electrical installation of this vessel has been fitted under Special Survey in accordance with the Rules, and approved plans.

The materials and workmanship are good.

On completion the installation was tested under full working conditions, and found to be efficient, and eligible in my opinion to have the record of "ELECTRIC LIGHT".

Noted

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27.7.34

Total Capacity of Generators **885** Kilowatts.

The amount of Fee ... £ **53 : 12** : **22/6/1934**

Travelling Expenses (if any) £ **-** : **-** : **23/6/1934**

Committee's Minute **TUE 31 JUL 1934**

Assigned

*See J.C. Rpt
Kob 8656*

TUE 23 JUL 1934

A.E. Munro

Surveyor to Lloyd's Register of Shipping.



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