

# REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office... 2 NOV 1931

Date of writing Report 15<sup>th</sup> Oct 1931. When handed in at Local Office 15/10/ 1931. Port of Yokohama

No. in Survey held at Uraga. Date, First Survey 29<sup>th</sup> June 1931. Last Survey 1st October 1931.  
Reg. Book. (Number of Visits... 12.)

on the Steel Screw M.V. "KATSURAGI MARU" Tons { Gross 5841  
Net 3485.

Built at Uraga By whom built Uraga Dock Co. Ltd Yard No. 374 When built 1931

Owners Kokusai Kisen Kaisha Port belonging to Hashidate

Electric Light Installation fitted by Uraga Dock Co. Ltd Contract No. 374 When fitted 1931.

Is the Vessel fitted for carrying Petroleum in bulk no.

System of Distribution Two wire system

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 Bottom platform, starboard side of 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 Port side of engine room, bottom 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. For each generator a double pole circuit breaker with overload reverse current trips & equalizing switch. Outgoing circuits a double pole switch with fuses.

Instruments on main switchboard 9 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 Change over switch is provided for 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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**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 6 Volts

**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 in cable holders and secured by metal clips.

If cables are run in wood casings, are the casings and caps secured by screws yes, are the cap screws of brass yes, are the cables run in separate grooves yes. 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. Insulated with rubber tape & compound and secured in cast iron water proof boxes.

**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 Rubber insulated wire of ample size for working current. are their connections made as per Rule yes

**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 top platform, starboard side of engine room, driven by a paraffin motor. supply controlled by change over switch.

**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 metal guards.

are any fittings placed in spaces where inflammable or explosive dust or gases are liable to be present, if so, how are they protected yes how are the cables led yes

where are the controlling switches situated yes

**Searchlight Lamps,** No. of One, whether fixed or portable fixed, are their fittings as per Rule yes

**Arc Lamps,** other than searchlight lamps, No. of yes, are their live parts insulated from the frame or case yes, are their fittings as per Rule yes

**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 yes if not of this type, state distance of the combustible material horizontally or vertically above the motors yes and yes

**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 yes


**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 yes

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

PARTICULARS OF GENERATING PLANT.									
DESCRIPTION OF GENERATOR.	No of	RATED AT				DRIVEN BY	WHERE DRIVEN BY AN INTERNAL COMBUSTION ENGINE.		
		Kilowatts.	Volts.	Ampères.	Revs. per Min.		Fuel Used.	Flash Point of Fuel.	
MAIN ...	3	135	225	600	300	Diesel engines.	Oil	above 150°F.	
AUXILIARY ...									
EMERGENCY ...	1	20	225	89	600	Paraffin engine	Paraffin Oil		
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	11680 30240	37	.064 .103	600	130 480/600	300	Rubber	Lead covered & Armoured
EQUALISER CONNECTIONS ...	1	30240	37	.103	220	240	150	"	" "
AUXILIARY GENERATOR...									
EMERGENCY GENERATOR ...	1	.07592	19	.072	89	94	45	"	" "
ROTARY TRANSFORMER { MOTOR GENERATOR...									
ENGINE ROOM...	1	.00299	3	.036	9	12	150	"	" "
BOILER ROOM...	1	.00299	3	.036	2	12	150	"	" "
AUXILIARY SWITCHBOARDS ...									
ACCOMMODATION ...	1	.00299	3	.036	4	12	450	"	" "
Midships	1	.00700	7	.036	20	24	60	"	" "
off	1	.00299	3	.036	4	12	500	"	" "
WIRELESS ...	1	.02840	19	.044	45	53	200	Rubber	Lead covered & Armoured
SEARCHLIGHT ...	1	.03960	19	.052	40	64	100	"	" "
MASTHEAD LIGHT ...	1	.00299	3	.036	15	12	550	"	" "
SIDE LIGHTS ...	1	.00299	3	.036	15	12	60	"	" "
COMPASS LIGHTS ...	1	.00299	3	.036	3	12	60	"	" "
POOP LIGHTS ...	1	.00299	3	.036	15	12	600	"	" "
CARGO LIGHTS ...	1	.00700	7	.036	10	24	400	"	" "
ARC LAMPS ...									
HEATERS ...									

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 Ballast pump LUB. OIL SERVICE PUMP MAIN ENGINE LUB. PUMPS	1	1	19640	37	.083	160	184	300	Rubber	Lead covered & Armoured
GENERAL SERVICE PUMP	1	1	.00701	7	.036	16	24	100	"	" "
EMERGENCY BILGE PUMP	1	1	.14780	37	.072	142	152	250	"	" "
SANITARY PUMP	1	1	.02840	19	.044	50	53	300	"	" "
CIRC. SEA WATER PUMPS	2	1	.14780	37	.072	142	152	80	"	" "
CIRC. FRESH WATER PUMPS...										
LUB. OIL Purifier AIR COMPRESSOR	2	1	.00299	3	.036	12	12	150	"	" "
FRESH WATER PUMP	1	1	.00701	7	.036	16	24	150	"	" "
ENGINE TURNING GEAR...	1	1	.01462	7	.052	34	37	200	"	" "
OIL FUEL Service Pumps ENGINE REVERSING GEAR	2	1	.00701	7	.036	16	24	40	"	" "
LUBRICATING OIL PUMPS	2	1	.14780	37	.072	142	152	100	"	" "
OIL FUEL TRANSFER PUMP	2	1	.03660	19	.052	60	64	60	"	" "
WINDLASS	1	1	.24650	37	.093	280	295	450	"	" "
WINCHES, FORWARD	4	1	.19640	37	.083	178	204	300	"	" "
	7	1	.11680	37	.064	132	138	180	"	" "
WINCHES, AFT	5	1	.24650	37	.093	220	244	300	"	" "
	6	1	.11680	37	.064	132	138	450	"	" "
STEERING GEAR—										
(a) MOTOR GENERATOR...	1	1	.07592	19	.072	80	101	600	"	" "
(b) MAIN MOTOR	1	1	.07592	19	.072	80	94	600	"	" "
WORKSHOP MOTOR	1	1	.00299	3	.036	6	12	60	"	" "
VENTILATING FANS	1	1	.01462	7	.052	36	37	80	"	" "
Fuel oil Burner motor	1	1	.00701	7	.036	20	20	150	"	" "

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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.

*R. Ham*

Electrical Engineers.

Date 11/10/31.

#### COMPASSES.

Distance between electric generators or motors and standard compass

10 feet

Distance between electric generators or motors and steering compass

5 feet

The nearest cables to the compasses are as follows:—

A cable carrying 3 Amperes 10 feet from standard compass 5 feet from steering compass.

A cable carrying 3 Amperes 20 feet from standard compass 5 feet from steering compass.

A cable carrying Amperes feet from standard compass feet from steering compass.

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

Has the effect of switching on and off circuits, motors and other electro-magnetic apparatus within the vicinity of the compasses been noted

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.

*E. O. Wright*

Builder's Signature.

Date 11/10/31.

Is this installation a duplicate of a previous case If so, state name of vessel

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

The Electric appliances & Installation have been fitted onboard under Special Survey in accordance with the Rules. Materials and workmanship good.

After completion of fitting all tried under full working condition with satisfactory results. Insulation & resistance tests carried out.

The Electric installation of this vessel together with the rest of the machinery is eligible in my opinion to be classed LMC. 10-31. in the Register Book.

It is submitted that this vessel is eligible for THE RECORD.

*Elec. Light*

27/10/31.

1m.1243.—Transfer.  
(The Surveyors are requested not to write on or below the space for Committee's Minute.)

Total Capacity of Generators 425 Kilowatts.

The amount of Fee £ 421.00 :  
When applied for, 6-10-1931  
When received, 12-10-1931

Travelling Expenses (if any) £

Committee's Minute

FRI. 13 NOV 1931

Assigned

*Elec. Light*

*J. M. Miles*

Surveyor to Lloyd's Register of Shipping.



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