

# REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office

2 JUL 1929

Date of writing Report 11 June 1929 When handed in at Local Office 10 Port of Kobe

No. in Survey held at Yama Date, First Survey 26-3-29 Last Survey 3<sup>RD</sup> JUNE 1929  
 Reg. Book. (Number of Visits 12)

on the Steel twin screw motorship "HAKONESAN MARU" Tons { Gross 6674  
 Net 4086

Built at Yama By whom built Mitsui Bussan Kaisha Yard No. 151 When built 1929

Owners Mitsui Bussan Kaisha Port belonging to Yokio

Electric Light Installation fitted by Mitsui Bussan Kaisha Contract No. 151 When fitted 1929

System of Distribution Two wire closed circuit

Pressure of supply for Lighting 220V 100 in E.R. volts, Heating 220 V 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 overload 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 and clearly marked Yes, are they so spaced or shielded that they cannot be accidentally earthed, or short circuited Yes Are the lubricating arrangements of the generators as per Rule Yes

Position of Generators Bottom engine room platform Star side, 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 axis 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 Platform in thrust recess, 11'-9" height from E.R. 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, incombustible non-absorbent materials Yes, is all insulation of high dielectric strength and of permanently high insulation resistance Marble Slabs, if semi-insulating material is used, are all conducting parts connected to one pole

insulated from the slab with mica or micanite and the slab similarly insulated from its framework Yes, and is the frame effectively earthed Yes

Are the following fittings as per Rule, viz.:— 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 fitted with double pole switch + circuit breaker with overload + reverse current release suitably connected with equalizing leads as per Rule requirement. Outgoing circuit fitted with double pole switch + fuse

Instruments on main switchboard 5 ammeters 3 voltmeters 6 pilot lamps 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. Two earth lamps + switches

Switches, Circuit Breakers and Fusible Cut-outs, do these comply with the requirements of the Rules Yes

Protection and Distribution Boards, is the construction, protection, insulation, material, and position of these as per rule Yes



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**Insulation of Cables**, state type of cables, single or twin *both* are the cables insulated and protected as per Tables III or IV of the Rules *yes*

**Fall of Pressure**, state maximum between bus bars and any point of the installation under maximum load *5-8 (windlass motor)*

**Cable Sockets and other connections**, are the ends of all cables having a sectional area of 0.007 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

**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 *Brass clips, armoured cables*

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 VI *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

**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 Positions**, where unarmoured cables pass through beams and non-watertight partitions, are the holes efficiently bushed  state the material of which the bushes are made

**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 *48 amp. hour x 12 volt Battery*

**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*, are separate screens provided for the use of oil and electric side lights *yes*

are separate oil lanterns provided for the mast head lights and side lights *yes*

**Fittings**, are all fittings on weather decks, in stowholds 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

how are the cables led

where are the controlling switches situated

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

**Arc Lamps**, other than searchlight lamps, No. of , 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 axis 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 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

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.	Ampères.		Fuel Used.	Flash Point of Fuel.
MAIN	3	0100 @ 100 @ 66	220	0155 @ 155 @ 300	400 Diesel Engine	Diesel Oil	Above 150
AUXILIARY							
EMERGENCY							
ROTARY TRANSFORMER	1	4	220-100	27			

LIGHTING AND HEATING CONDUCTORS.

Ref. No.	DESCRIPTION.	No. of Conductors.	Effective Area of each Conductor. Sq. Ins.	COMPOSITION OF STRAND.		Total Maximum Current. Ampères.	Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED.
				No.	Diameter.				
	MAIN GENERATOR	2 @ 3	.762	250	20	455	160	Rubber	Armoured
	EMERGENCY GENERATOR	2 @ 2	.509	250	20	300	200	"	"
10	ROTARY TRANSFORMER	1	.015	15	20	26	40	"	"
	AUXILIARY SWITCHBOARDS								
	ENGINE ROOM								
	BOILER ROOM								
11	Settling tank heater	1	.03	30	20	40	160	"	"
22	WIRELESS	1	.03	30	20	24	400	"	"
	NAVIGATION LIGHT (MAIN)	1	.0071	7	20	1	300	"	"
	MASTHEAD LIGHT	1	.0018	1	18	.2	500	"	"
	SIDE LIGHTS	1	.0041	1	18	.2	300	"	"
	MASTHEAD LIGHT (APT)	1	"	1	18	.2	580	"	"
	POOP LIGHTS	1	"	1	18	.2	550	"	"
	CARGO LIGHTS	2	.015	15	20	1.5	500	"	"
23	Arc Lamp	1	.112	110	20	110	140	"	"
24	HEATERS APT FOR	1	.061	60	20	80	380	"	"

MOTOR CONDUCTORS.

Ref. No.	DESCRIPTION.	No. of Motors.	Effective Area of each Conductor. Sq. Ins.	COMPOSITION OF STRAND.		Total Maximum Current. Ampères.	Approximate Length. (Lead and Return.) Feet.	Insulated with	HOW PROTECTED.
				No.	Diameter.				
3	BALLAST PUMP	1	.061	60	20	68	200	Rubber & Tape	Armoured
4	MAIN BILGE LINE PUMPS	1	.019	19	20	29	180	"	"
	GENERAL SERVICE PUMP								
	EMERGENCY BILGE PUMP								
	SANITARY PUMP								
1	CIRC. SEA WATER PUMPS	1	.112	110	20	98	220	"	"
	CIRC. FRESH WATER PUMPS								
	AIR COMPRESSOR								
6	FRESH WATER PUMP	1	.019	19	20	36	140	"	"
6	ENGINE TURNING GEAR	1	.019	19	20	36	140	"	"
	ENGINE REVERSING GEAR								
2	LUBRICATING OIL PUMPS	1	.112	110	20	98	200	"	"
5	OIL FUEL TRANSFER PUMP	1	.019	19	20	36	120	"	"
21	WINDLASS	1	.254	250	20	240	660	"	"
	WINCHES, FORWARD								
	WINCHES, AFT								
12	STEERING GEAR	1	.061	60	20	60	540	"	"
9	WORKSHOP MOTOR	1	.007	7	20	8	110	"	"
	VENTILATING FANS								
14	N° 7 Winch (3-ton)	2	.204	200	20	208	400	"	"
15	N° 6 " (" )	"	"	"	"	"	"	"	"
16	N° 5 " (" )	"	"	"	"	"	200	"	"
17	N° 4 " (" )	"	"	"	"	"	260	"	"
18	N° 3 " (" )	"	"	"	"	"	300	"	"
19	N° 2 " (" )	"	"	"	"	"	480	"	"
20	N° 1 " (" )	"	"	"	"	"	500	"	"
7	LUB. OIL PURIFIER	1	.061	60	20	65	140	"	"
8	FUEL OIL PURIFIER	1	.112	110	20	105	120	"	"
13	POOP WINCH (5-ton)	1	.112	110	20	120	540	"	"
	REFRIGERATING MACHINE	1	.019	19	20	40	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.

*E. Maeda.* Electrical Engineers. Date *31.5.29.*

**COMPASSES.**

Distance between electric generators or motors and standard compass *30'-0"*  
 Distance between electric generators or motors and steering compass *30'-0"*  
 The nearest cables to the compasses are as follows:—  
 A cable carrying *24* Amperes *20* feet from standard compass *15* feet from steering compass.  
 A cable carrying *60* Amperes *-* feet from standard compass *10* feet from steering compass. (*ON POOP*)  
 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 *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.

*S. Ukas*  
 Builder's Signature. Date

Is this installation a duplicate of a previous case *Yes* If so, state name of vessel *M/S "Hakubasen Maru"*  
*Kobe Rpt No 6368*

General Remarks (State quality of workmanship, opinions as to class, &c. *The electrical equipment referred to herein has been installed under special survey. The materials + workmanship employed are good. In our opinion this vessel should be awarded the highest class for her electrical equipment.*)

*It is submitted that this vessel is eligible for THE RECORD Elec Light.*

*(Signature)*  
*27/7/29*

Total Capacity of Generators *266* Kilowatts

The amount of Fee ... *¥421.-* When applied for, *15 June 1929*  
 Travelling Expenses (if any) *See Hull Rpt* When received, *28.10.29*

*W. Kimber + Clive Bell*  
 Surveyor to Lloyd's Register of Shipping.

Committee's Minute

FRI. 5 JUL 1929

FRI. 4 OCT 1929

Assigned

*Elec Light*

50,1243.—Transfer. (The Surveyors are requested not to write on or below the space for Committee's Minute.)



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