

REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office

30 OCT 1936

Date of writing Report 12-9-1936 When handed in at Local Office 17-9-1936 Port of KOBE

No. in Survey held at TAMA Date, First Survey 29-7-36 Last Survey 31-8-1936
Reg. Book. (Number of Visits 5)on the SINGLE SCREW MOTORSHIP "TOKYO MARU" Tons { Gross 6486.01
Net 3863.68

Built at TAMA By whom built MITSUI BUSSAN KAISHA Yard No. 217 When built 1936

Owners SETTSU SHOSEN K. K. Port belonging to OSAKA

Electric Light Installation fitted by MITSUI BUSSAN KAISHA Contract No. 217 When fitted 1936

Is the Vessel fitted for carrying Petroleum in bulk NO.

System of Distribution DIRECT CURRENT TWO WIRES

Pressure of supply for Lighting 225 volts, Heating 225 volts, Power 225 volts.

Direct or Alternating Current, Lighting D.C. Power D.C.

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 IN ENG. ROOM. (NO. 1 - FORWARD OUT BOARD, NO. 2 - FORWARD INBOARD, NO. 3 - AFT.)

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

NO WOODWORK OR OTHER COMBUSTIBLE MATERIAL 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 CENTER OF MACHINERY SPACE

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 NONE 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 2-3" x 7/16" (1220 amp/ft²), individual fuses to voltmeter, pilot or earth lamp YES, connections of switches 2 POL ✓

Main Switchgear, description of switchgear for each generator and each outgoing circuit, and arrangement of equalizer switches TRIPLE POLE CIRCUIT

BREAKER (CENTER POLE BEING FOR EQUALIZER SWITCH) WITH OVER LOAD + REVERSE CURRENT TRIP AND

D. P. LINKED SWITCH. LIGHTING & OUT GOING CIRCUITS: - D. P. LINKED SWITCH & D. P. FUSES. ✓

Instruments on main switchboard 7 ammeters 5 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 2 VOLT METER WITH

ONE CHANGE SWITCH. ✓

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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Lloyd's Register
Foundation

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

Fall of Pressure, state maximum between bus bars and any point of the installation under maximum load ABOUT 5 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 SECURED BY IRON & BRASS CLIPS

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 NOT FITTED

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 BOTH POLE INSULATED

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 NONE

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 GAUARD

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 4, whether fixed or portable FIXED, are their fittings as per Rule YES

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 axes of rotation fore and aft YES (EXCEPT 2 F.O. SHIFTING PUMP MOTORS)

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

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.	Amps.	Revs. per Min.		Fuel Used.	Flash Point of Fuel.
MAIN	3	240	225	1067	400	DIESEL ENGINES	HEAVY OIL	ABOVE 150°F
AUXILIARY								
EMERGENCY								
ROTARY TRANSFORMER								

GENERATOR, LIGHTING AND HEATING CONDUCTORS.

DESCRIPTION.	CONDUCTORS.		COMPOSITION OF STRAND.		TOTAL MAXIMUM CURRENT.		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	3	1.0026	140	0.0551	1067	1236	262	PAPER	LEAD & ARMURED.
EQUALISER CONNECTIONS	2	.406	85	"	533	600	131	"	"
AUXILIARY GENERATOR									
EMERGENCY GENERATOR									
ROTARY TRANSFORMER MOTOR GENERATOR									
ENGINE ROOM LIGHT	1	.00935	12	.0315	15	39	33	PAPER	L & A
BOILER ROOM									
AUXILIARY SWITCHBOARDS									
ACCOMMODATION LIGHT	1	.0234	30	.0315	20	50	98	RUBBER	L & A
FAN	1	.00546	7	"	9.5	20	150	"	"
WIRELESS	1	.0234	30	.0315	25	50	164	RUBBER	L & A
SEARCHLIGHT	1	.00546	7	"	2.3	20	60	"	"
MASTHEAD LIGHT	1	.00175	1	.0473	0.2	7	150	"	"
SIDE LIGHTS	1	"	1	"	"	7	49	"	"
COMPASS LIGHTS	1	"	1	"	1	7	50	"	LEAD
POOP LIGHTS	1	.00314	1	.063	3.1	13	700	"	L & A
CARGO LIGHTS	1	.00935	12	.0315	24	30	100	"	"
ARC LAMPS									
HEATERS	1	.0234	30	.0315	54.6	50	98	"	"

MOTOR CONDUCTORS.

DESCRIPTION.	No. of Motors.	CONDUCTORS.		COMPOSITION OF STRAND.		TOTAL MAXIMUM CURRENT.		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	1	1	.1337	56	.0551	102	228	33	PAPER	LEAD & ARMURED.
W. SANITARY										
Main Bilge Pumps	1	1	.0234	30	.0315	31	98	"	RUBBER	"
GENERAL SERVICE PUMP	1	1	.1337	56	.0551	102	228	"	PAPER	"
FUEL OIL SHIFTING PUMP	1	1	.00314	1	.0630	9	12	"	RUBBER	"
LEG OIL PURIFIERS	2	1	.00935	12	.0315	13	29	"	"	"
SCAVANGE BLOWERS	2	1	.3342	140	.0551	1540	228	200	PAPER	"
FRESH WATER PUMPS	2	1	.00314	1	.063	9	12	33	RUBBER	"
FUEL OIL PURIFIERS	2	1	.00935	12	.0315	9.1	29	"	"	"
AIR COMPRESSOR	1	1	"	"	"	13	39	"	"	"
FRESH WATER PUMP	1	1	.0635	37	.0354	50	60	50	"	"
ENGINE TURNING GEAR	2	1	.1337	56	.0551	192	228	164	PAPER	"
ENGINE REVERSING GEAR	2	1	.203	85	"	238	300	200	"	"
LUBRICATING OIL PUMPS	2	1	.0789	80	.0354	81	100	50	RUBBER	"
OIL FUEL TRANSFER PUMP	1	1	.203	85	.0551	245	375	525	PAPER	"
WINDLASS	4	1	.3342	140	"	464	575	400	"	"
WINCHES, FORWARD	4	2	.203	85	"	556	750	260	"	"
WINCHES, AFT	4	2	"	"	"	"	"	378	"	"
"	4	2	"	"	"	662	"	460	"	"
STEERING GEAR—										
(a) MOTOR GENERATOR	1	1	.203	85	.0551	195	375	600	PAPER	"
(b) MAIN MOTOR	1	1	"	"	"	153	"	"	"	"
WORKSHOP MOTOR	1	1	.00314	1	.063	9	13	65	RUBBER	"
VENTILATING FANS	2	1	.0234	30	.0315	24	98	164	"	"
CRANE MOTOR	2	1	.0365	37	.0354	49	60	80	"	"
R.M.C. COOLING PUMPS	2	1	.00546	7	.0315	10.4	21	33	"	"
" BRINE PUMPS	2	1	.00935	12	"	14.2	29	"	"	"
" COMPRESSORS	2	1	.1337	56	.0551	120	228	"	PAPER	"
GALLEY COOKING FANS	2	1	.00314	1	.063	9.2	12	100	RUBBER	"

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 15th Sep 1936

COMPASSES.

Distance between electric generators or motors and standard compass ABOUT 65 FT. FROM ENGINE ROOM VENTILATING FAN MOTOR.
 Distance between electric generators or motors and steering compass " 59 "

The nearest cables to the compasses are as follows:—

A cable carrying 2.2 Ampères 14 feet from standard compass 4 feet from steering compass.
 A cable carrying 1.6 Ampères 14 feet from standard compass 4 feet from steering compass.
 A cable carrying 1.4 Ampères 14 feet from standard compass 4 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 YES, NOT INTERFERED
 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.

PER PRO MITSUI BUSSAN KAISHA, LTD.,

N. Naito Builder's Signature. Date 15th Sep 1936
 SUB-MANAGER SHIPBUILDING DEPT.

Is this installation a duplicate of a previous case YES If so, state name of vessel M.S. "CANBERRA MARU" (TAMA S. No. 216)

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

The Electric Installation of this vessel has been fitted under Special Survey in accordance with the Rules & approved plans.

The materials and workmanship are good.

On completion, the installation was tested under full working condition and found to be efficient and is eligible, in our opinion, to be accepted for classification.

NOTE:- The Spare gear placed on board is in excess of that required by the Rules.

*Noted
 Y. H. M.
 2.11.36*

Total Capacity of Generators 720 Kilowatts.

The amount of Fee £ 78-15-0 When applied for Aug. 31st 1936
 Travelling Expenses (if any) £ ✓ : ✓ : Sept. 16th 1936 When received.

C. Macpherson *M. Kamakura*
 Surveyor to Lloyd's Register of Shipping.

Committee's Minute TUE. 3 NOV 1936

Assigned See Kob. 78.9745

2m. 3. 31. — Transfer. The Surveyors are requested not to write on or be in the space for Committee's Minute.