

REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office 20 JUL 1936

Date of writing Report 19-6-1936 When handed in at Local Office 27-6-1936 Port of KOBE

No. in Survey held at TAMA Date, First Survey 23-3-36 Last Survey 30-5-1936
Reg. Book. (Number of Visits 8)

on the STEE SINGLE SCREW MOTORSHIP "CANBERRA MARU"

Tons { Gross 6477
Net 3858

Built at TAMA By whom built MITSUI BUSSAN KAISHA Yard No. 216 When built 1936

Owners OSAKA SHOSEN KABUSHIKI KAISHA Port belonging to OSAKA

Electric Light Installation fitted by MITSUI BUSSAN KAISHA Contract No. ✓ 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 OUTBOARD, 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 2-3/16" (1220 amp/□"), individual fuses to voltmeter, pilot or earth lamp YES, connections of switches 2 POLES

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 CONTACT SWITCH) WITH OVERLOAD & 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 METERS 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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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. ✓

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.

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 GAUDED

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. (EXCEPT 2 F.O. SHIFTING PUMP MOTORS) 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. ✓

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.	Revs. per Min.		Fuel Used.	Flash Point of Fuel.	
MAIN	3	240	225	1067	450	DIESEL ENGINE	HEAVY OIL	ABOVE 150° F	
AUXILIARY									
EMERGENCY									
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 INCH.	In Circuit.	Rule.			
MAIN GENERATOR	3	1.0026	140	.0551	1067 ✓	1236	262	PAPER	LEAD + ARMoured
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	LEAD + ARMoured
BOILER ROOM... ..									
AUXILIARY SWITCHBOARDS									
ACCOMMODATION LIGHT.	1	.0234	30	.0315	20 ✓	50	98	RUBBER	LEAD + ARMoured
FAN	1	.00546	7	"	9.5 ✓	20	150	"	" "
WIRELESS	1	.0234	30	.0315	250 ✓	50	164	RUBBER	LEAD + ARMoured
SEARCHLIGHT	1	.00546	7	"	2.3 ✓	20	60	"	" "
MASTHEAD LIGHT	1	.00175	1	.0473	0.2 ✓	7	150	"	" "
SIDE LIGHTS	1	"	1	"	"	"	49	"	" "
COMPASS LIGHTS	1	"	1	"	10 ✓	"	50	"	LEAD COVERED
POOP LIGHTS	1	.00314	1	.063	3.1 ✓	13	700	"	LEAD + ARMoured
CARGO LIGHTS	1	.00935	12	.0315	240 ✓	30	100	"	" "
ARC LAMPS									
HEATERS	1	.0234	30	.0315	546 ✓	50	98	"	LEAD + 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.			
4 BILGE BALLAST PUMP	1	1	.1337	56	.0551 ✓	102	228	33	PAPER	LEAD + ARMoured
MAIN BILGE PUMPS	1	1	.0234	30	.0315 ✓	31	98	"	RUBBER	" "
FIRE & GENERAL SERVICE PUMP	1	1	.1337	56	.0551 ✓	102	228	"	PAPER	" "
L.O. SHIFTING PUMP	1	1	.00314	1	.0630 ✓	9	12	"	RUBBER	" "
L.O. PURIFIERS	2	1	.00935	12	.0315 ✓	13	29	"	"	" "
SCAVANGE BLOWERS	2	4	.3342	140	.0551 ✓	1540	1648	200	PAPER	" "
CRANE & FIRE WATER PUMPS	2	1	.00314	1	.063 ✓	9	12	33	RUBBER	" "
F.O. PURIFIERS	2	1	.00935	12	.0315 ✓	9.1	29	"	"	" "
FRESH WATER PUMP	1	1	"	"	" ✓	13	39	"	"	" "
ENGINE TURNING GEAR... ..	1	1	.0365	37	.0354 ✓	50	60	50	"	" "
COOLING WATER PUMPS	2	1	.1337	56	.0551 ✓	192	228	164	PAPER	" "
LUBRICATING OIL PUMPS	2	1	.203	85	" ✓	238	300	200	"	" "
OIL FUEL TRANSFER PUMP	2	1	.0789	80	.0354 ✓	81	100	50	RUBBER	" "
WINDLASS	1	1	.203	85	.0551 ✓	245	375	525	PAPER	" "
WINCHES, FORWARD	4	1	.3342	140	" ✓	464	575	400	"	" "
" "	4	2	.203	85	" ✓	556	750	260	"	" "
WINCHES, AFT	4	2	"	"	" ✓	"	"	328	"	" "
" "	4	2	"	"	" ✓	662	"	460	"	" "
STEERING GEAR—										
(a) MOTOR GENERATOR	1	1	.203	85	.0551 ✓	195	375	600	PAPER	LEAD + ARMoured
(b) MAIN MOTOR	1	1	"	"	" ✓	153	"	60	"	" "
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 FAN	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 *24th Jun, '36.*

COMPASSES.

Distance between electric generators or motors and standard compass *65 FT. FROM ENGINE ROOM VENTILATING FAN MOTOR.*

Distance between electric generators or motors and steering compass *59 FT. " " " " " "*

The nearest cables to the compasses are as follows:—

A cable carrying *2.2* Amperes *14* feet from standard compass *4* feet from steering compass.

A cable carrying *1.6* Amperes *14* feet from standard compass *4* feet from steering compass.

A cable carrying *1.4* Amperes *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

SUB-MANAGER SHIPBUILDING DEPT.

Builder's Signature.

Date *24th Jun, '36.*

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 + approved plans.

The materials and workmanship are good.

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

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

Noted

Thun

24.7.36

Total Capacity of Generators *720* Kilowatts.

The amount of Fee ... *£ 78-15-0* When applied for, *29/5/1936*

Travelling Expenses (if any) £

When received.

25-8-36

M. Kamakura.

Surveyor to Lloyd's Register of Shipping.

Committee's Minute *FRI. 24 JUL 1936*

Assigned

See the Kob JE 9607



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