

Rpt. 13.

No. 668-D

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office

Date of writing Report 25-2-1952 When handed in at Local Office 25-2-1952 Port of YOKOHAMA

No. in Survey held at YOKOSUKA, JAPAN Date, First Survey 1-10-51 Last Survey 26-11-1952
Reg. Book.

(No. of Visits 10)

on the S.S. "HIKOSAN MARU"

Tons { Gross 6362.68
Net 3637.26

Built at YOKOSUKA, JAPAN By whom built URAGA DOCK CO., LTD. Yard No. 632 When built 11-1951

Owners NAKANO KISEN CO., LTD. Port belonging to TOKYO

Installation fitted by URAGA DOCK CO., LTD., YOKOSUKA When fitted 11-1951

Is vessel equipped for carrying Petroleum in bulk NO Is vessel equipped with D.F. YES E.S.D. YES Gy.C. YES Sub.Sig. NO Radar YES

Plans, have they been submitted and approved YES System of Distribution ~~SINGLE PHASE TWO WIRE~~ THREE PHASE THREE WIRE Voltage of Lighting 110 V.

Heating 110 V. Power 220 V. D.C. or A.C., Lighting A.C. Power A.C. If A.C. state frequency 60 cycle

Prime Movers, has the governing been found as per Rule when full load is thrown on and off YES Are turbine emergency governors fitted with a trip switch YES Generators, are they compound wound —, and level compounded under working conditions —

if not compound wound state distance between generators — and from switchboard — Are the generators arranged to run in parallel YES, are shunt field regulators provided — Is the compound winding connected to the negative or positive pole —

Have machines over 100 kw. been inspected by the Surveyors during manufacture and testing YES Have certificates of test for machines under 100 kw. been supplied YES and the results found as per Rule YES

Position of Generators SECOND FLOOR IN ENGINE ROOM STARBOARD

is the ventilation in way of generators satisfactory YES are they clear of inflammable material and protected from mechanical injury and damage from water, steam and oil YES Switchboards, where are main switchboards placed MANOEUVREING PLATFORM IN ENGINE ROOM, STARBOARD, FORWARD

are they in accessible positions, free from inflammable gases and acid fumes and protected from mechanical injury and damage from water, steam and oil YES, what insulation is used for the panels SYNTHETIC RESIN BONDED BOARD "BAKELITE" if of synthetic insulating material is it an Approved Type YES, if of semi-insulating material (slate or marble) are all conducting parts insulated therefrom as per Rule — Is the construction as per Rule, including locking of screws and nuts YES Description of Main Switchgear

for each generator and arrangement of equaliser switches. A TRIPLE-POLE LINKED CIRCUIT-BREAKER WITH OVER CURRENT TRIPS IN TWO PHASES AND A REVERSE POWER RELAY.

and the switch and fuse gear (or circuit breakers) for each outgoing circuit. A TRIPLE-POLE LINKED CIRCUIT-BREAKER WITH OVERCURRENT TRIPS IN TWO PHASES, OR A FUSE ON EACH PHASE AND A TRIPLE POLE LINKED SWITCH FOR LIGHTING CIRCUIT.

Are compartments containing switchboards composed of fire-resisting material or lined as per Rule YES Instruments on main switchboard AC-14
ammeters AC-5 DC-3 voltmeters 1 synchronising devices. For compound machines in parallel are the ammeters and reversed current protection devices connected on the pole opposite to the equaliser connection — Earth Testing, state means provided EARTH INDICATING LAMPS OF METAL-FILAMENT TYPE OF EACH 10 WATTS.

Switches, Circuit Breakers and Fuses, are they as per Rule YES, are the fuses an Approved Type YES

make of fuses MITSUBI NOF, are all fuses labelled YES If circuit breakers are provided for the generators, at what overload do they operate 125% and at what current do the reversed current protective devices operate 10% OF RATED CURRENT

Joint Boxes, Section Boards and Distribution Boards, is the construction as per Rule YES

Cables, are they insulated and protected as per Rule YES, if otherwise than as per Rule are they of an Approved Type —

state maximum fall of pressure between bus bars and any point under maximum load 4.2 V, are the ends of all cables having a sectional area of 0.01 square inch and above provided with soldering sockets. THE ENDS OF CONDUCTORS ARE CLAMPED WITH SUBSTANTIAL MECHANICAL CLAMPS Are all paper insulated and varnished cambric insulated cables sealed at the ends — Are all the cable runs in accessible positions, not exposed to drip or accumulation of water or oil, high temperatures or risk of mechanical damage YES, are any cables laid under machines or floorplates YES, if so, are they adequately protected YES Are cables in machinery spaces, galleys, laundries, etc., lead covered YES or run in conduit YES

or of the "HR" type — State how the cables are supported or protected WHERE NOT EXPOSED TO DRIP OR ACCUMULATION OF WATER OR OIL, OR RISK OF MECHANICAL DAMAGE, ARE SUPPORTED BY CLIPS OR STRAPS ON SADDLES, METAL HANGERS OR BACKING PLATE, AND WHERE EXPOSED TO THEM ARE PROTECTED BY SHEET IRON PLATE OR HEAVY GAUGE SCREWED STEEL CONDUIT.

Are all lead sheaths, armouring and conduits effectually bonded and earthed YES Are all cables passing through decks and watertight bulkheads provided with deck tubes or watertight glands YES, where unarmoured cables pass through beams, etc., are the holes effectively bushed YES

Refrigerated chambers, are the cables and fittings as per Rule YES

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Lloyd's Register
Foundation

Alternative Lighting, are the groups of lights in the engine and boiler rooms arranged as per Rule... YES Emergency Supply, state position YES
BATTERIES ON UPPER BRIDGE DECK PORTSIDE AFTER SUPERINTENDENT ENGINE ROOM, WIRELESS ROOM, DAMAGE, PUMP ROOM AND COMMUNICATION ETC.
Navigation Lamps, are they separately wired YES controlled by separate double pole switches and fuses YES Are the switches and fuses in a position accessible only to the officers on watch YES is an automatic indicator fitted YES Is an alternative supply provided YES
Secondary Batteries, are they constructed and fitted as per Rule YES are they adequately ventilated YES
state battery capacity in ampere hours 180 AMPERE HOURS
Fittings, are all fittings on weather decks, in stokeholds and engine rooms and wherever exposed to drip or condensed moisture, weatherproof YES
Are any fittings installed where readily combustible materials or inflammable or explosive dust or gases are likely to be present NO
if so, how are they protected -
and where are the controlling switches fitted - Are all fittings suitably ventilated YES
Searchlight Lamps, No. of - whether fixed or portable - are they of the carbon arc or of the filament type -
Heating and Cooking, is the general construction as per Rule YES are the frames effectually earthed YES are heaters in the accommodation of the convection type - Motors, are all motors constructed and installed as per Rule and placed in well-ventilated compartments in which inflammable gases cannot accumulate and protected from damage from water, steam and oil YES
Are motors coupled to oil fuel transfer and pressure pumps capable of being stopped from a position accessible in the event of fire in the pump compartment YES Have motors of 100 BHP and over been inspected by the Surveyors during manufacture and testing YES
Have certificates of test for motors under 100 BHP intended for essential sea services been supplied and the results found as per Rule YES
Control Gear and Resistances, are they constructed and fitted as per Rule YES Lightning Conductors, where required are they fitted as per Rule - Ships carrying Oil having a Flash Point less than 150° F. Have all the special requirements of the Rules for such ships been complied with - are all fuses of an Approved Cartridge Type - make of fuse - Are the fittings for pump rooms, 'tween deck spaces, etc., in accordance with the special requirements for such ships - Are the cables lead covered as per Rule -
E.S.D., if fitted state maker NIPPON ELECTRIC INDUSTRY CO., LTD. TOKYO location of transmitter NO. 1 CARGO HOLD PORTSIDE AFT and receiver STARBOARD AFT
Spare Gear, if the vessel is for open sea service have spares been provided as per Rule and suitably stored in dry situations YES
Insulation Tests, has the insulation resistance of all circuits and apparatus been tested and found satisfactory YES

PARTICULARS OF GENERATING PLANT.

DESCRIPTION OF GENERATOR.	No. of	MAKER.	RATED AT				PRIME MOVER.	
			Kilowatts per Generator.	Volts.	Ampères.	Revs. per Min.	TYPE.	MAKER.
MAIN ...	2	MEIDENSHA	150	225	462	1800	HORIZONTAL GEARED TURBINE	URAGA DOCK CO., LTD. YOKOHAMA
PORT SERVICE	1	MEIDENSHA	30	225	90	600	VERTICAL STEAM RECIPROCATING COMPOUND	ISHII KOSAKUSHO, OSAKA
EMERGENCY ... ROTARY TRANSFORMER								

GENERATOR CABLES.

DESCRIPTION.	KILOWATTS.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (lead plus return feet).	INSULATION.	PROTECTIVE COVERING.
		No. in Parallel per Pole.	Sectional Area or No. and Dia. of Strands. Sq. ins. or sq. mm.	In the Circuit.	Rule.			
MAIN GENERATOR ...	150	5	3 ^c - 37/0.083	462	465	37	RUBBER	LEAD ALLOY SHEATHED & ARMORED
" " EXCITER	3	1	2 ^c - 7/0.064	27.2	33	37	"	"
PORT SERVICE GENERATOR	30	2	3 ^c - 19/0.083	90	120	43	RUBBER	LEAD ALLOY SHEATHED & ARMORED
" " EXCITER	2	1	2 ^c - 7/0.052	18.1	27	43	"	"
EMERGENCY GENERATOR ...								
ROTARY TRANSFORMER: MOTOR								
" " GENERATOR...								

MAIN DISTRIBUTION CABLES (to Section Boards, Distribution Fuse Boards, etc.).

DESCRIPTION.		No. in Parallel per Pole.	Sectional Area or No. and Dia. of Strands. Sq. ins. or sq. mm.	MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (lead plus return feet).	INSULATION.	PROTECTIVE COVERING.
				In the Circuit.	Rule.			
FROM MAIN SWITCH BOARD TO P ₁ SECTION BOX		2	3 ^c - 37/0.072	130	154	37	RUBBER	LEAD ALLOY SHEATHED & ARMORED
" " P ₂ "		2	"	130	154	37	"	"
" " P ₃ "		2	3 ^c - 19/0.083	88	120	63	"	"
" " P ₄ "		2	"	100	120	33	"	"
" " P ₅ "		2	"	100	120	93	"	"
" " P ₆ "		2	3 ^c - 19/0.064	80	84	66	"	"
FROM P ₆ SECTION BOX TO P ₇ "		1	3 ^c - 7/0.044	8	16	10	"	"
FROM MAIN SWITCH BOARD TO SHORE CONNECTION BOX		4	3 ^c - 37/0.072	308	308	120	"	"

LIGHTING, HEATING, WIRELESS, NAVIGATION LIGHTS, ETC., CABLES.

DESCRIPTION.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (lead plus return feet).	INSULATION.	PROTECTIVE COVERING.
	No. in Parallel per Pole.	Sectional Area or No. and Dia. of Strands. Sq. ins. or sq. mm.	In the Circuit.	Rule.			
FROM MAIN SWITCH BOARD TO L-B DISTRIBUTION BOX	1	3 ^c - 7/0.064	8.5	23	150	RUBBER	LEAD ALLOY SHEATHED & ARMORED
" " L-L "	1	3 ^c - 7/0.044	13	16	100	"	"
" " L-M "	1	3 ^c - 19/0.064	28.8	42	16	"	"
" " L-P "	1	"	34.7	42	130	"	"
" " NO. 1 SECTION BOX	1	"	31.8	42	140	"	"
" " NO. 2 "	1	"	33.5	42	130	"	"
" " NO. 3 "	1	"	31.9	42	80	"	"
" " NO. 4 "	1	3 ^c - 19/0.083	49.6	60	80	"	"
FROM NO. 1 SECTION BOX TO L-B DISTRIBUTION BOX	1	3 ^c - 7/0.064	12.5	23	30	"	"
NO. 3 " L-K "	1	3 ^c - 7/0.029	7.4	11	165	"	"
" " L-G "	1	"	3.7	11	210	"	"
NO. 4 " L-I "	1	3 ^c - 7/0.044	13.0	16	75	"	"
" " L-J "	1	3 ^c - 7/0.064	18.9	23	130	"	"
FROM MAIN SWITCH BOARD TO NAVIGATION LIGHT	1	2 ^c - 7/0.029	1.82	11	165	"	"
" " SUEZ CANAL SEARCH LIGHT	1	2 ^c - 7/0.036	9.1	12	320	"	"
" " WIRELESS EQUIPMENT	1	3 ^c - 19/0.083	60	60	140	"	"
" " C-2 DISTRIBUTION BOX	1	3 ^c - 19/0.064	30	42	165	"	"

MOTOR CABLES.

ALL IMPORTANT MOTORS TO BE ENUMERATED.	No.	B.H.P.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (lead plus return feet).	INSULATION.	PROTECTIVE COVERING.
			No. in Parallel per Pole.	Sectional Area or No. and Dia. of Strands. Sq. ins. or sq. mm.	In the Circuit.	Rule.			
LUBRICATING OIL PUMP	2	27	1	3 ^c - 37/0.072	67	77	56	RUBBER	LEAD ALLOY SHEATHED & ARMORED
CONDENSATING PUMP	2	13.5	1	3 ^c - 19/0.083	33.5	60	80	"	"
ENG. ROOM VENTILATING PUMP	2	5	1	3 ^c - 7/0.044	12.8	16	165	"	"
FORCED DRAFT FAN	1	25	1	3 ^c - 37/0.072	60	77	93	"	"
FUEL OIL BURNING PUMP	1	3	1	3 ^c - 7/0.044	8.6	16	50	"	"
BOILER ROOM VENTILATING FAN	1	5	1	"	12.8	16	50	"	"
FUEL OIL TRANSFER PUMP	1	15	1	3 ^c - 19/0.083	44	60	95	"	"
FORCED DRAFT FAN	1	7.5	1	3 ^c - 19/0.052	19.3	33	180	"	"
FIRE & G.S. PUMP	1	40	2	3 ^c - 19/0.083	97	120	60	"	"
STEERING GEAR	1	15	1	3 ^c - 19/0.083	40	60	264	"	"

The Electrical Equipment is installed in accordance with the approved plans and the requirements of the Rules.
All Insulated Conductors are guaranteed to have been tested at the maker's works as specified in the Rules.
The foregoing is a correct description.

T. Kojima

Electrical Contractors.

Date *26 Mar. 1952*

COMPASSES.

Have the compasses been adjusted under working conditions *YES*

[Signature]

Builder's Signature.

Date *26 Mar. 1952*

Have the foregoing descriptions and schedules been verified and found correct *YES*

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

Plans. Are approved plans forwarded herewith *NO* If not, state date of approval *12-7-51*
14-8-51

Certificates. Are certificates of test for motors engaged on essential sea services and generators forwarded herewith *YES*

General Remarks. (State quality of workmanship, whether insulation tests, etc., have been made, opinions as to class, etc.)

The Electric Equipment of this vessel has been constructed and installed under the Supervision of the Society's Surveyors in accordance with the approved plans and the Rules.

The workmanship and material have been found satisfactory.

The Equipment has been examined under working condition and insulation tested according to Rules.

It is submitted that the electrical equipment of this vessel is eligible to be classed with this Society and to have the notation + LMC 11.51

Noted EHK 16/7/52

Total Capacity of Generators *330* Kilowatts.

The amount of Fee ... *£ 223,800.-* : : When applied for,

19

When received,

Travelling Expenses (if any) £ : : *19*

[Signature]
Surveyor to Lloyd's Register of Shipping.

Committee's Minute *FRI. 18 JUL 1952*

Assigned *See F. E. [Signature]*



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