

Rpt. 13.

No. 570

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

9 - AUG 1956

Received at London Office

Date of writing Report 19... When handed in at Local Office 19... Port of Shimonoseki

No. in Survey held at Nagasaki, Japan Date, First Survey 9-4-56 Last Survey 3-6-1956
Reg. Book. (No. of Visits 9)

36405 on the M/T "KOSOH MARU" carrying vegetable oil in deep tanks
in way of tunnel. Tons (Gross 9204.74 Net 5349.95)

Built at Nagasaki, Japan By whom built Mitsubishi Zosen K.K. Yard No. 1465 When built 6-1956

Owners Daido Kaikan K.K. Port belonging to Kobe

Installation fitted by Mitsubishi Zosen K.K., Nagasaki When fitted 6-1956

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 Three wire three phase Voltage of Lighting 110

Heating 110 Power 440 D.C. or A.C., Lighting A.C. Power A.C. If A.C. state frequency 60
Windless 440 D.C.V. Moring winch 220 D.C.V.

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 - 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 Port fwd, part aft inboard and outboard of mchy space on platform level 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 at fwd end of mchy space on platform level

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 Phenolic resin-bonded sheet and bar, 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 air circuit breaker with an instantaneous overcurrent trip in each phase, an overcurrent relay in each phase, a preference overcurrent relay for hold fan circuit, a reverse power relay and triple pole linked isolating switch fitted. Neutral insulated from earth.

and the switch and fuse gear (or circuit breakers) for each outgoing circuit A triple pole linked air circuit breaker with an overcurrent trip on each pole fitted. Breakers of De-ion type made by Mitsubishi Electric Mfg Co., Ltd., Tokyo

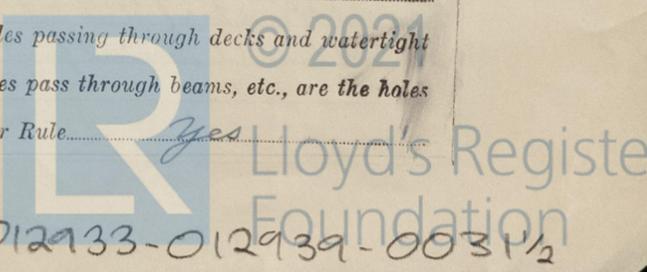
Are compartments containing switchboards composed of fire-resisting material or lined as per Rule Yes Instruments on main switchboard 3 ammeters 3 voltmeters 1 synchronising devices. For compound machines in parallel are the ammeters and reversed current protection devices connected on the pole opposite to the equaliser connection - Earth Testing, state means provided 2 sets of metallic filament lamps for power and lighting circuits

Switches, Circuit Breakers and Fuses, are they as per Rule Yes, are the fuses an Approved Type Yes make of fuses Tokai Elect. Mfg Co., Ltd., Tokyo and Hitachi Electric Mfg Co., Ltd., Tokyo, are all fuses labelled Yes If circuit breakers are provided for the generators, at what overload do they operate 50% (480A) 17 sec, and at what power current do the reversed power protective devices operate 25 KW

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 6 volts, are the ends of all cables having a sectional area of 0.01 square inch and above provided with soldering sockets mechanical clamps Are all paper insulated and varnished cambric insulated cables sealed at the ends Yes 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 partly or of the "HR" type Yes partly State how the cables are supported or protected Cables of metal braided secured by metal clips on coated steel hangers or galvanized perforated steel plates. Cables in cargo spaces protected by steel platings

Are all lead sheaths, armoring 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



012933-012939-0031/2

Alternative Lighting, are the groups of lights in the engine and boiler rooms arranged as per Rule. Yes Emergency Supply, state position Boat dk. S. side, 24V battery units with automatic central switch for lighting accommodation, navigation and machinery spaces.

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 alternative supply provided. 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. 2 sets of 84 AH 24 volts

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. Yes if so, how are they protected. a certified flameproof lighting fitting placed in secondary battery room. and where are the controlling switches fitted. outside battery room in weatherproof casing. 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. Yes 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. —

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. Tejga Krishna Sengha, Tejga location of transmitter. and and receiver. R.B. F119/120

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				TYPE.	PRIME MOVER.	MAKER.
			K.V.A. Kilowatts per Generator.	Volts.	Ampères.	Revs. per Min.			
MAIN	3	Mitsubishi Elect. Mfg. Co., Ltd., Nagasaki	250	450	321	450	Diesel	Niigata Engineering Co., Ltd., Niigata	
EMERGENCY ROTARY TRANSFORMER									

GENERATOR CABLES.

DESCRIPTION.	K.V.A. KILOWATTS.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (lead plus returns-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	300	2 (3C)	37/083	321	400	P. 14	V. Cambic	Lead, metal braided
" " EQUALISER						P. 19		
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.	In the Circuit.	Rule.	APPROX. LENGTH (lead plus returns-feet).	INSULATION.	PROTECTIVE COVERING.
Power:—							
Main switchboard to eng. room air, sthd. S-B (P-12)	1 (3C)	19/064	76.1	91	21	V. Cambic	Lead, metal braided
Main switchboard to eng. room air, port aft. S-B (P-13)	1 (3C)	7/064	36	51	26	V. Cambic	Lead, metal braided
Main switchboard to eng. room air, starboard S-B (P-14)	1 (3C)	19/064	88	91	15	V. Cambic	Lead, metal braided
Main switchboard to eng. room air, midship S-B (P-15)	1 (3C)	7/052	13	38	14	V. Cambic	Lead, metal braided
Main switchboard to eng. room vent fan S-B (P-16)	2 (3C)	37/072	233	332	48	V. Cambic	Lead, metal braided
Main switchboard to cargo winch aft. S-B (P-17)	2 (3C)	37/072	202	332	56	V. Cambic	Lead, metal braided
Main switchboard to hold fan S-B (P-18)	1 (3C)	19/052	44	70	19	V. Cambic	Lead, metal braided
Main switchboard to ref. plant S-B (P-19)	1 (3C)	37/083	150	200	17	V. Cambic	Lead, metal braided
Main switchboard to thermostat fan S-B (P-20)	1 (3C)	7/052	16.4	38	33	V. Cambic	Lead, metal braided
Note:—							* Diversity factor applied.

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

DESCRIPTION.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (lead plus returns-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.			
Lighting:—							
Main switchboard to 3X20KVA transformers (P-25)	1 (3C)	19/064	81	91	8	V. Cambic	Lead, metal braided
above transformers to lighting panel (P-25A)	2 (3C)	37/072	315	332	7	V. Cambic	Lead, metal braided
Lighting panel to navigation bridge S-B (L-1)	1 (3C)	7/064	40	51	30	V. Cambic	Lead, metal braided
Lighting panel to accommodation light S-B (L-2)	1 (3C)	19/083	124	128	26	V. Cambic	Lead, metal braided
Lighting panel to cargo light S-B (L-3)	1 (3C)	19/064	70	91	25	V. Cambic	Lead, metal braided
Lighting panel to engine room light S-B (L-4)	1 (3C)	19/064	78	91	10	V. Cambic	Lead, metal braided
S-B (L-1) to navigation light D-F-B	1 (2C)	7/052	2	55	L+R 6	V. Cambic	Lead, metal braided
S-B (L-2) to boat dk. light S-B (L-2-1)	1 (3C)	7/064	32	51	10	V. Cambic	Lead, metal braided
S-B (L-2-1) to navigation light D-F-B	1 (2C)	7/052	2	55	L+R 8	V. Cambic	Lead, metal braided
Cooking and Heating:—							
Lighting panel to saloon pantry S-B (L-6)	1 (3C)	37/072	138	166	22	V. Cambic	Lead, metal braided
above to galley and heater S-B	1 (3C)	37/072	86	166	27	V. Cambic	Lead, metal braided
Wireless:—							
Lighting panel to radio S-B (W-1)	1 (3C)	7/052	20	38	37	V. Cambic	Lead, metal braided
Main switchboard to radio S-B (407) (P-21)	1 (3C)	7/036	12	19	37	V. Cambic	Lead, metal braided
Suez Canal Searchlight:—							
Power S-B (P-16) to 5KVA transformer (8P-16)	1 (2C)	7/036	estimated (11)	19	L+R 63	Indian R.	Lead, metal braided
above transformer to switch and fuse box	1 (2C)	7/052	(45)	55	L+R 14	V. Cambic	Lead, metal braided

MOTOR CABLES.

ALL IMPORTANT MOTORS TO BE ENUMERATED.	No.	B.H.P.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (lead plus returns-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.			
Ackland and piston cooling F.W. pumps	2	42	1 (3C)	19/044	50	58	9	V. Cambic	Lead, metal braided
Cooling S.W. pumps	2	55	1 (3C)	19/052	64	70	7	V. Cambic	Lead, metal braided
L.O. pumps	2	15	1 (3C)	7/044	21	29	24	V. Cambic	Lead, metal braided
L.O. shifting pump	1	4	1 (3C)	1/064	5.4	7	15	Indian R.	H.R., metal braided
O.F. service pump	1	4	1 (3C)	1/064	5.4	7	17	Indian R.	H.R., metal braided
O.F. transfer pump	1	15	1 (3C)	7/044	20.4	29	13	V. Cambic	Lead, metal braided
L.O. purifiers	1	2	1 (3C)	1/064	2.8	7	11	Indian R.	H.R., metal braided
O.F. purifiers	3	2	1 (3C)	1/064	2.8	7	max. 17	Indian R.	H.R., metal braided
O.F. classifiers	2	2	1 (3C)	1/064	2.8	7	12/13	Indian R.	H.R., metal braided
Purifier pumps	2	3	1 (3C)	1/064	3.8	7	12/10	Indian R.	H.R., metal braided
Purifier pump	1	1.5	1 (3C)	1/064	2.0	7	13	Indian R.	H.R., metal braided
Bilge pump	1	5.5	1 (3C)	7/036	7.6	12	9	Indian R.	H.R., metal braided
Bilge and ballast pump	1	45	1 (3C)	19/064	82	91	33	V. Cambic	Lead, metal braided
Fine and G.S. pump	1	50	1 (3C)	19/052	60	70	32	V. Cambic	Lead, metal braided
Forced circulation pumps	2	5	1 (3C)	1/064	6	7	29/32	Indian R.	H.R., metal braided
Engine room vent fans	2	5	1 (3C)	1/064	6.6	7	52/65	Indian R.	H.R., metal braided
Steering gear	2	20	1 (3C)	7/044	29.2	29	99	V. Cambic	Lead, metal braided
Auxiliary blower	1	30	1 (3C)	7/052	35	38	30	V. Cambic	Lead, metal braided
Turbocharger starting L.O. pumps	1	2	1 (3C)	1/064	2.9	7	28	Indian R.	H.R., metal braided
Ref. plant gas compressors	3	30	1 (3C)	7/064	36.5	51	max. 17	V. Cambic	Lead, metal braided
Ref. plant C.W. pumps	2	5	1 (3C)	1/064	6.2	7	30/30	Indian R.	H.R., metal braided
Ref. plant air cooler fans	4	4	1 (3C)	1/064	5.6	7	max. 44	Indian R.	H.R., metal braided
Windlass (440 V.D.C.)	1	80	1	19/064	158	133	L+R 77	V. Cambic	Lead, metal braided
Hoisting winch (220 V.D.C.)	1	53	1	19/083	208	192	L+R 63	V. Cambic	Lead, metal braided
Leonard winch M-G motors	2	85 kW	1 (3C)	19/083	139	133	30	V. Cambic	Lead, metal braided
Leonard winch M-G motors	7	45 kW	1 (3C)	19/052	73	76	max. 37	V. Cambic	Lead, metal braided
Leonard winch M-G motors	4	20	1 (3C)	7/044	24.5	29	max. 41	V. Cambic	Lead, metal braided

Note:— * Insulation braided.

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.

S. Koga
NAGASAKI WORKS
MITSUBISHI SHIPBUILDING & ENGINEERING CO., LTD.

Electrical Contractors.

Date *3rd June, 1956*

COMPASSES.

Have the compasses been adjusted under working conditions... *Yes*

S. Koga
NAGASAKI WORKS
MITSUBISHI SHIPBUILDING & ENGINEERING CO., LTD.

Builder's Signature.

Date *3rd June, 1956*

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 *4-1-56, 22-3-56*

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 Electrical Equipment and Installation of this ship have been made under special survey in accordance with the requirements of the Rules, the approved plans and the Secretary's letters.

The materials and workmanship are good.

All tests and trials as required by the Rules have been completed with satisfactory results.

Total Capacity of Generators... *7.50* K.V.A. Kilowatts.

The amount of Fee ... *¥279,000*

When applied for,

JUL 26 1956

LOCALLY

When received,

Travelling Expenses (if any) £ : : *10*

P. Manson Peter Manson
Surveyor to Lloyd's Register of Shipping.

Committee's Minute... *FRIDAY 14 SEP 1956*

Assigned... *See Rpt. 4.6.*