

REPORT ON ELECTRICAL EQUIPMENT

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Date of writing Report 8th October 1963 When handed in at Local Office NOV 27 1963 Received at London Office KOBE

No. in Survey held at Aioi, Japan Date, First Survey 30th April, Last Survey 12th Sept, 63 Reg. Book 1963 (No. of Visits 10)

on the Steel Single Screw m.s. "LOZOVAYA" Tons Gross 23,138.68 Net 14,589.47

Built at Aioi, Japan By whom built Aioi Works, Yard No. 615 When built Sept. 1963

Owners V/O "Sudoimport" Port belonging to Odessa

Installation fitted by Ishikawajima-Harima Heavy Industries Co., Ltd., Aioi Works, Aioi When fitted Sept., 1963

Is vessel equipped for carrying Petroleum in bulk Yes 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 3 phase, 3 wire insulated Voltage of Lighting 120

Heating 120 Power 380, 120 D.C. or A.C. Lighting A.C. Power A.C. If A.C. state frequency 50 c/s

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 Self regulating type

Generators, are they compound wound, and level compounded under working conditions

Are the generators arranged to run in parallel Yes Is the compound winding connected to the negative or positive pole

Have machines 100 kw. and over been inspected by the Surveyors during manufacture and testing Yes Have certificates of test for machines under 100 kw. been supplied and the results found as per Rule Yes Position of Generators On lower floor port side in engine room

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 On lower flat forward midship in engine room

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 board, 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 over current and reverse power protection and a triple pole linked isolating knife switch

and the switch and fuse gear (or circuit breakers) for each outgoing circuit A triple linked "No Fuse" breaker with over current protection.

Are compartments containing switchboards composed of fire-resisting material or lined as per Rule Yes Instruments on main switchboard 8 ammeters 9 voltmeters 2 synchronising devices. For compound machines in parallel are the ammeters and reverse current protection devices connected on the pole opposite to the equaliser connection Earth Testing, state means provided Ground meters with alarm devices and three Preference Tripping, state if provided Yes (Two stage), and tested Yes lamps with metallic filament.

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

make of fuses UTUNOMIYA "CELLO-LITE", are all fuses labelled Yes If circuit breakers are provided for the generators, at what power and at what current do the reverse protective devices operate 131% 20 sec. 15% 10 sec

Cables, are they insulated and protected as per Rule Yes if otherwise than as per Rule are they of an Approved Type Yes, state maximum fall of pressure between bus bars and any point under maximum load 400 V side 13 V 127V side 5 V

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 State type of cables (if in conduit this should also be stated) in machinery spaces B.Y.C. R.Y.C., galleys B.Y.C. R.Y.C. and laundries R.Y.C.

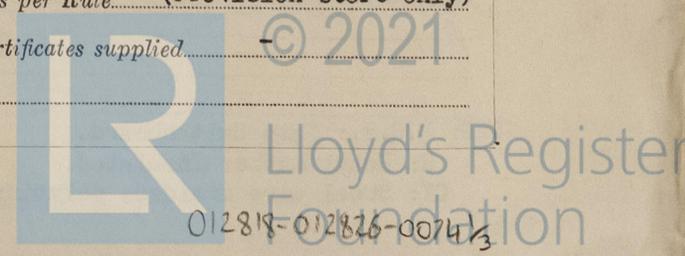
State how the cables are supported or protected Clipped on steel hangers, saddles, trays or directly on structural steel or wood work and protected with heavy gauge steel pipes or sheet steel plates where necessary.

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 - (Provision store only)

Have refrigeration fan motors been constructed under survey and test certificates supplied

Are the motors accessible for maintenance at all times

20/1/64



Alternative Lighting, are the groups of lights in the engine and boiler rooms arranged as per Rule. Yes. Emergency Supply, state position Emergency generator and emergency switchboard: In emergency generator room on captain deck port side. Battery: Battery room on nav. bridge deck, Charging panel: Nav. bridge deck,

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, fitted and adequately ventilated as per Rule. Yes, state battery capacity in 24V=120 AHx2: General Use, 24V-97AHx1: Emerg. Fire Pump, 24V-60AHx1: Fire Alarm ampère hours. 24V=400 AHx1: Emerg. Gen. Where required to do so does it comply with 1948 International Convention.

Lighting, is fluorescent lighting fitted. Yes. If so, state nominal lamp voltage. 120 and compartments where lamps are fitted.

Officer's saloon, main and emergency switchboards, engine room and boiler room gauge boards and telephone booth only.

Fittings, are all fittings on weather decks, in stokeholds and engine rooms and wherever exposed to drip or condensed moisture, weatherproof. Yes

Searchlights, No. of 1, whether fixed or portable. Fixed, are they of the carbon arc or of the filament type. Filament

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. 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

Lightning Conductors, where required are they fitted as per Rule.

Ships carrying Oil having a Flash Point of less than 150° F. Have all the special requirements of the Rules for such ships been complied with. Yes, are all fuses of an Approved Cartridge Type. Yes, make of fuse. UTUNOMIYA "CELLOLITE". Are the fittings for pump rooms, tween deck spaces, etc., in accordance with the special requirements for such ships. Yes. Are all cables lead covered as per Rule.

E.S.D., if fitted state maker. U.S.S.R. location of transmitter and receiver. Between fr. No. 61-62

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
			Kw. per Generator	Volts	Ampères	Revs. per Min.		
MAIN ...	3	Tokyo Shibaura Electric Co., Ltd.	280	400	505	600	Diesel	Yokohama Shipyard & Engine Works, Mitsubishi Nippon Heavy Ind. Ltd.
EMERGENCY ROTARY TRANSFORMER	1	Tokyo Shibaura Electric Co., Ltd.	80	400	145	1,000	Diesel	Kubota Iron & Machinery Works Ltd.

GENERATOR CABLES

DESCRIPTION	No. of	Kw.	CONDUCTORS		MAXIMUM CURRENT IN AMPERES		APPROX. LENGTH (lead only) in meters	INSULATION	PROTECTIVE COVERING
			No. in Parallel per Pole	Sectional Area (sq. mm.)	In the Circuit	Rule			
MAIN GENERATOR ...	3	280	3	100	505	175x3	22	B	YC
" " ...	3	"	"	"	"	" x3	19	"	"
" " ...	"	"	"	"	"	" x3	33	"	"
EMERGENCY GENERATOR ...	1	80	1	80	145	150	5	B	YC

MAIN DISTRIBUTION CABLES (to Auxiliary Switchboards, etc.)

DESCRIPTION	No. of	Kw.	No. in Parallel per Pole	Sectional Area (sq. mm.)	In the Circuit	Rule	INSULATION	PROTECTIVE COVERING
From M.S.B. to transformer 30KVx3 (Primary)	1	80		130	150	10	B	YC
" " " (Secondary)	3	100		410	175x3	10	"	"
" E.S.B. to " 10KVx3 (Primary)	1	22		43.3	66	6	R	"
" " " (Secondary)	1	100		136.5	175	6	B	"
" " to Navigation Light Indicator	1	3.5		2	22	13	R	" (2 core)
" M.S.B. to Cooking Range 30 KW	1	100		144	175	53	B	"
" " Baking Oven 11KW	1	30		53	85	55	"	"
" E.S.B. to Transformer 5KVx1 (SJEZ)	1	3.5		7.9	22	190	R	NCY (2 core)
" M.S.B. to Shore Connection Box	1	80		137	150	42	B	YC
" " to Emergency Switchboard	1	125		200	200	36	B	YC

NOTE: M.S.B.: Main Switchboard. Y: Polyvinylchloride Sheathed. N: Polychloropren Sheathed.
B: Butyl Rubber Insulated. C: Steel Wire Braided Cable. R: Vulcanised rubber Insulated.
CY: Steel wire braided, polyvinylchloride covering cable.

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

DESCRIPTION	No. in Parallel per Pole	Sectional Area (sq. mm.)	MAXIMUM CURRENT IN AMPERES		APPROX. LENGTH (lead only) in meters	INSULATION	PROTECTIVE COVERING
			In the Circuit	Rule			
From M.S.B. to No. A1-1 Section Box	1	8	25.55	36	45	R	YC
" " No. A1-2 " " "	1	14	27.64	50	45	R	"
" " No. A1-3 " " "	1	3.5	14.2	22	25	"	"
" " No. A1-7 " " "	1	8	22	36	37	"	"
" " No. A1-8 " " "	1	14	30.5	50	10	"	"
" " No. A1-9 " " "	1	30	58.5	79	10	"	"
" " No. A1-13 " " "	1	3.5	15	22	25	"	"
" " No. A1-14 " " "	1	8	25.2	36	62	"	"
" " No. A1-15 " " "	1	3.5	15	22	10	"	"
" " No. B1-10 " " "	1	14	28	50	40	"	"
" " No. C8-8 " " "	1	"	29	"	20	"	"
" " No. C8-9 " " "	1	"	36.9	"	22	"	"
" " No. C8-15 " " "	1	2	9.6	16	160	"	NCY
" " No. D8-11 " " "	1	8	17.2	36	35	"	YC
" " No. D8-12 " " "	1	14	28	50	37	"	"
" " No. D8-16 " " "	1	"	38	"	55	"	"
" " No. D8-17 " " "	1	2	7.29	16	55	"	"
" " No. D8-18 " " "	1	8	23	36	45	"	"
" " No. 9-1 " " "	1	22	33.8	66	44	"	"
" " No. 9-2 " " "	1	14	28.2	50	45	"	"
" " No. 9-3 Dist. Fuse " " "	1	8	22	36	21	"	"
" " No. 9-4 " " "	1	"	26	"	10	"	"
" " No. 9-5 " " "	1	"	12	"	34	"	"
" " No. 9-6 Section " " "	1	14	35	50	57	"	"
" " No. 9-7 " " "	1	8	16	36	33	"	"
" " No. 9-8 " " "	1	"	13	"	45	"	"
" " No. 9-9 " " "	1	22	42	66	57	"	"
" " No. 9-10 " " "	1	"	42	"	63	"	"
" " No. 9-11 " " "	1	8	18	36	31	"	"
" " No. 9-12 " " "	1	2	5	16	23	"	"
" " No. 9-13 " " "	1	3.5	11	22	36	"	"
" " No. 9-19 " " "	1	60	117	130	18	B	"
" E.S.B. to No. E3-8 " " "	1	2	5	16	9	R	"
" " No. E3-9 " " "	1	2	2	"	9	"	"
" " No. E3-10 " " "	1	3.5	5	22	55	"	"
" " No. E3-11 " " "	1	5.5	10	29	55	"	"
" " No. E3-13 Dist. Fuse Box " " "	1	14	19	50	40	R	YC
" " No. E3-14 " " "	1	"	17	"	"	"	"
" " No. E3-15 " " "	1	8	8	36	50	"	"
" " No. E3-16 Section " " "	1	30	59.3	79	10	"	"
" " No. E3-17 " " "	1	30	59.5	"	27	"	"

Lub. Oil Pump	2	50	1	38	97	99	32	B	"
Fire Pump	2	75	1	80	140	150	19	"	"
Nozzle Cooling F.W. Pump	2	3.7	1	2	7.2	16	42	R	"
L.O.P. for Turbo-Charger	2	1.1	1	2	2.4	"	17	"	"
F.O. Booster Pump	2	5.5	1	"	11.5	"	28	"	"
Make Up Air Compressor	1	15	1	8	34	36	25	"	"
Anchorage Service C.S.W. Pump	1	3.7	1	2	7.5	16	23	"	"
Reserve Cool. W. Pump	1	65	1	60	120	130	25	B	"
Aux. Cool. Water Pump	1	45	1	38	83	92	30	R	"
Bilge Pump	1	2.2	1	2	4.9	16	23	"	"
G.S. & Bilge Pump	2	22	1	14	42	50	60	R	"
Forced Draft Fan	2	26	1	22	52	66	60	"	"
Main Pump Room Vent. Fan	2	5.5	1	2	11.5	16	22	R	"
Steering Gear	1	40 BHP	1	22	61	66	115	"	"
" " "	1	"	1	22	61	"	80	R&B	"
F.O. Transfer pump	1	11	1	5.5	24	29	5	R	"
F.O. Service Pump	1	3.7	1	2	7.5	16	6	"	"
F.O. Burning Pump	2	5.5	1	"	11	"	9	"	"
Engine Room Vent. Fan	4	7.5	1	"	14	"	60	"	"
Boiler Room Vent. Fan	2	7.5	1	"	"	"	48	R&B	"
Diesel Oil Purifier (A)	1	7.5	1	3.5	14.5	22	11	R	"
" " (C)	1	7.5	1	"	"	22	11	"	"
L.O. Purifier	2	7.5	1	3.5	"	"	9	"	"
L.O. Transfer Pump	1	3	1	2	7.5	16	15	"	"
Eject Pump for F.W. Gen.	1	6.7	1	"	13	"	13	"	"
Condensate Pump for F.W. Gen.	1	0.75	1	"	1.8	"	8	"	"

NOTE.—Use Rpt. 13 Continuation Sheet if the above space is insufficient

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

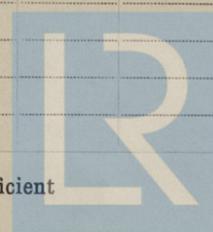
DESCRIPTION	CONDUCTORS		MAXIMUM CURRENT IN AMPERES		APPROX. LENGTH (lead) in meters	INSULATION	PROTECTIVE COVERING
	No. in Parallel per Pole	Sectional Area in sq. mm.	In the Circuit	Rule			
From M.S.B. to No. A1-1 Section Box	1	8	25.55	36	45	R	YC
" " No. A1-2 " "	1	14	27.64	50	45	R	"
" " No. A1-3 " "	1	3.5	14.2	22	25	"	"
" " No. A1-7 " "	1	8	22	36	37	"	"
" " No. A1-8 " "	1	14	30.5	50	10	"	"
" " No. A1-9 " "	1	30	58.5	79	10	"	"
" " No. A1-13 " "	1	3.5	15	22	25	"	"
" " No. A1-14 " "	1	8	25.2	36	62	"	"
" " No. A1-15 " "	1	3.5	15	22	10	"	"
" " No. B1-10 " "	1	14	28	50	40	"	"
" " No. C8-8 " "	1	"	29	"	20	"	"
" " No. C8-9 " "	1	"	36.9	"	22	"	"
" " No. C8-15 " "	1	2	9.6	16	160	"	NCY
" " No. D8-11 " "	1	8	17.2	36	35	"	YC
" " No. D8-12 " "	1	14	28	50	37	"	"
" " No. D8-16 " "	1	"	38	"	55	"	"
" " No. D8-17 " "	1	2	7.29	16	55	"	"
" " No. D8-18 " "	1	8	23	36	45	"	"
" " No. 9-1 " "	1	22	33.8	66	44	"	"
" " No. 9-2 " "	1	14	28.2	50	45	"	"
" " No. 9-3 Dist. Fuse " "	1	8	22	36	21	"	"
" " No. 9-4 " "	1	"	26	"	10	"	"
" " No. 9-5 " "	1	"	12	"	34	"	"
" " No. 9-6 Section " "	1	14	35	50	57	"	"
" " No. 9-7 " "	1	8	16	36	33	"	"
" " No. 9-8 " "	1	"	13	"	45	"	"
" " No. 9-9 " "	1	22	42	66	57	"	"
" " No. 9-10 " "	1	"	42	"	63	"	"
" " No. 9-11 " "	1	8	18	36	31	"	"
" " No. 9-12 " "	1	2	5	16	23	"	"
" " No. 9-13 " "	1	3.5	11	22	36	"	"
" " No. 9-19 " "	1	60	117	130	18	B	"
" E.S.B. to No. E3-8 " "	1	2	5	16	9	R	"
" " No. E3-9 " "	1	2	2	"	9	"	"
" " No. E3-10 " "	1	3.5	5	22	55	"	"
" " No. E3-11 " "	1	5.5	10	29	55	"	"

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

Plans. Are approved plans forwarded herewith. If not, state date of approval.

Jacket Cooling F.W. Pump	1	45	1	38	83	92	30	R	YC
Cooling Sea Water Pump	1	65	1	60	120	130	26	B	"
Piston Cool. F.W. Pump	2	37	1	30	68	79	50	R	"
Lub. Oil Pump	2	50	1	38	97	99	32	B	"
Fire Pump	2	75	1	80	140	150	19	"	"
Nozzle Cooling F.W. Pump	2	3.7	1	2	7.2	16	42	R	"
L.O.P. for Turbo-Charger	2	1.1	1	2	2.4	"	17	"	"
F.O. Booster Pump	2	5.5	1	"	11.5	"	28	"	"
Make Up Air Compressor	1	15	1	8	34	36	25	"	"
Anchorage Service C.S.W. Pump	1	3.7	1	2	7.5	16	23	"	"
Reserve Cool. W. Pump	1	65	1	60	120	130	25	B	"
Aux. Cool. Water Pump	1	45	1	38	83	92	30	R	"
Bilge Pump	1	2.2	1	2	4.9	16	23	"	"
G.S. & Bilge Pump	2	22	1	14	42	50	60	R	"
Forced Draft Fan	2	26	1	22	52	66	60	"	"
Main Pump Room Vent. Fan	2	5.5	1	2	11.5	16	22	R	"
Steering Gear	1	40 BHP	1	22	61	66	115	"	"
" " "	1	"	1	22	61	"	80	R&B	"
F.O. Transfer pump	1	11	1	5.5	24	29	5	R	"
F.O. Service Pump	1	3.7	1	2	7.5	16	6	"	"
F.O. Burning Pump	2	5.5	1	"	11	"	9	"	"
Engine Room Vent. Fan	4	7.5	1	"	14	"	60	"	"
Boiler Room Vent. Fan	2	7.5	1	"	"	"	48	R&B	"
Diesel Oil Purifier(A)	1	7.5	1	3.5	14.5	22	11	R	"
" " " (C)	1	7.5	1	"	"	22	11	"	"
L.O. Purifier	2	7.5	1	3.5	"	"	9	"	"
L.O. Transfer Pump	1	3	1	2	7.5	16	15	"	"
Eject Pump for F.W. Gen.	1	6.7	1	"	13	"	13	"	"
Condensate Pump for F.W. Gen.	1	0.75	1	"	1.8	"	8	"	"

NOTE.—Use Rpt. 13 Continuation Sheet if the above space is insufficient



© 2021

Lloyd's Register Foundation

00743

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.

M. Yamane

Electrical Contractors.

Date 20th Sept., 1963

COMPASSES

Have the compasses been adjusted under working conditions Yes

M. Yamane

Builder's Signature.

Date 20th Sept., 1963

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 22-1-1963, 5-3-1963

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

General Remarks. (State quality of workmanship and materials, opinions as to class, etc.) The electrical equipment installed in this ship was examined and tested in accordance with the requirements of the Society's Rules and of the approved plans, and found to be satisfactory, complying with the Rule requirements.

The materials are good and sound.

The generators, motors, etc. were examined and tested under full working conditions with satisfactory results.

3m.5.60—Transfer. (MADE AND PRINTED IN ENGLAND) (The Surveyors are requested not to write on or below the space for Committee Minute.)

Total Capacity of Generators 920 Kilowatts.

The amount of Fee ... £ 273,000- When applied for, 19

Travelling Expenses (if any) £ : When received, 19

M. Ishiwatari
 Surveyor to Lloyd's Register of Shipping
 M. Ishiwatari

Committee's Minute FRIDAY 24 JAN 1964

Assigned *Subpt 1*

* RMS
 7.1.64.

ht

CHA



© 2021

Lloyd's Register Foundation