

Rpt. 13

# REPORT ON ELECTRICAL EQUIPMENT

No. FE-10175

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Date of writing Report 5th June, 1962. When handed in at Local Office JUN 28 1962 Received at London Office  
 No. in Survey held at Aioi, Japan Port of KOBE  
 Reg. Book Date, First Survey 20th Feb., 1962 Last Survey 21st May, 1962

on the Steel Single Screw m.s. "LENKORAN" (No. of Visits )  
 Built at Aioi, Japan By whom built Ishikawajima-Harima Heavy Ind. Ltd., Aioi Works Tons { Gross 23,158.70  
 Owners V/O "Sudoimport" Yard No. 592 When built May, 1962

Installation fitted by Ishikawajima-Harima Heavy Ind. Co., Ltd., Aioi Works Port belonging to Odessa  
 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. - Radar Yes  
 When fitted May, 1962

Plans, have they been submitted and approved. Yes System of Distribution Three phase, Three Wire Insulated  
 Heating 120 Power 120, 380 D.C. or A.C. Lighting A.C. Power A.C. If A.C. state frequency 50  
 Voltage of Lighting 120

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 Self regulating type, 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 portside 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 mid-ship  
 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 pole 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 12  
 ammeters 8 voltmeters 1 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. Three lamps  
 with metallic filament and a ground meter with alarm device Preference Tripping, state if provided. Yes, and tested. Yes

Switches, Circuit Breakers and Fuses, are they as per Rule. Yes, are the fuses an Approved Type. Yes  
 make of fuses. Utsunomiya "Cello-lite", are all fuses labelled. Yes If circuit breakers are provided for the generators, at what  
 overload do they operate 125% - 20 seconds, and at what current do the reverse ~~current~~ protective  
 devices operate -15% - 10 seconds

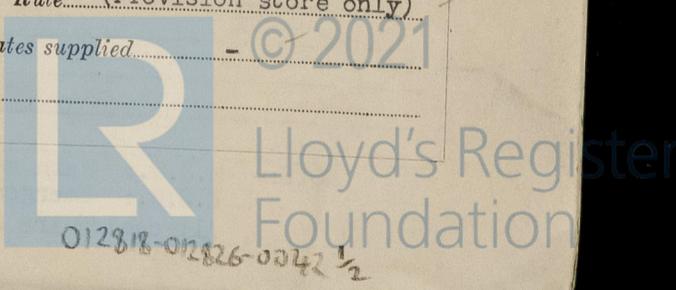
Cables, are they insulated and protected as per Rule. Yes  
 if otherwise than as per Rule are they of an Approved Type. -, state maximum fall of pressure between bus bars and any point  
 under maximum load. 7 volts. Are all paper insulated and varnished cambric insulated cables sealed at the ends. 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 State  
 type of cables (if in conduit this should also be stated) in machinery spaces. V.L.C. R.L.C., galleys. V.L.C. R.L.C.  
 and laundries. R.L.C. State how the cables are supported or protected. Generally fixed with metal  
 clips on steel hangers, saddles, trays, or directly on structural steel or wood work, and protected with  
 heavy gauge steel tubes or 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. -

NOTE:- V: Varnished cambric insulated. R: Vulcanised rubber insulated.  
 L: Lead alloy sheathed. C: Steel wire braided.



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Alternative Lighting, are the groups of lights in the engine and boiler rooms arranged as per Rule. Yes. Emergency Supply, state position 80 KW Emerg. generator and switchboard: Emerg. generator room on Captains deck port side.

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 ampere hours. 24V-120AHx2 for general use. 24V-240AHx1 for emergency starting. Where required to do so does it comply with 1948 International Convention. Yes.

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

Officer's saloon, Main and emerg. switchboard, Gauge boards in Engine and Boiler room.

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 2, 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. 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. Utsumomiya "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. fore & aft g P.C.P. Sheathed ways.

E.S.D., if fitted state maker. Type NAL-5, Sudoimport made in U.S.S.R. location of transmitter and receiver. 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	MAKER
			Kw. per Generator	Volts	Ampères	Revs. per Min.			
MAIN	3	Tokyo Shibaura Elect. Co., Ltd.	280	400	505	600	Diesel	Yokohama Shipyard & Eng. Works Mitsubishi Nippon Heavy Ind. Ltd.	
EMERGENCY ROTARY TRANSFORMER	1	Tokyo Shibaura Elect. Co., Ltd.	80	400	145	1000	Diesel	Kubota Iron & Mach. Works Ltd.	

GENERATOR CABLES

DESCRIPTION	No. of	Kw.	CONDUCTORS		MAXIMUM CURRENT IN AMPERES		APPROX. LENGTH (lead only) (M)	INSULATION	PROTECTIVE COVERING
			No. in Parallel per Pole	Sectional Area or No. and Dia. of Strands sq. mm.	In the Circuit	Rule			
MAIN GENERATOR	3	280	3	37/2.11	505	200x3	29, 29, 38	V	LC
" " EQUALISER									
EMERGENCY GENERATOR	1	80	1	37/1.83	145	166	25	V	LC

MAIN DISTRIBUTION CABLES (to Auxiliary Switchboards, etc.)

DESCRIPTION	No.	Sectional Area or No. and Dia. of Strands sq. mm.	In the Circuit	Rule	APPROX. LENGTH (lead only) (M)	INSULATION	PROTECTIVE COVERING
From M.S.B. to 300 KVA Transformer (Pri.)	1	37/1.83	130	231	10	V	LC
" " " " (Sec.)	2	37/2.36	40	251x2	12	"	"
" E.S.B. " 10 KVA " (Pri.)	1	7/1.63	43.3	51	7	"	"
" " " " (Sec.)	1	19/2.11	136.5	141	6	"	"
" " " Navigation Lt. indicator	1	7/0.91	2.7	24	18	R	" (2 core)
" M.S.B. " Suez Canal Light	1	7/0.91	13.2	17	215	"	" (2 core)
" " " Shore connection box	1	37/1.83	137	166	40	V	"
" " " Emergency switchboard	1	37/2.11	187	200	40	"	"

NOTE:- M.S.B.: Main switchboard.  
E.S.B.: Emergency switchboard.  
All cables are of three core type except as specially noted.

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

DESCRIPTION	No. in Parallel per Pole	Sectional Area or No. and Dia. of Strands sq. mm.	MAXIMUM CURRENT IN AMPERES		APPROX. LENGTH (lead only) (M)	INSULATION	PROTECTIVE COVERING
			In the Circuit	Rule			
From M.S.B. to No. A1-1 Section Board	1	7/1.63	9.2	23	25	R	LC
" " " No. A1-2	1	"	16	51	25	V	"
" " " No. A1-3	1	"	27.7	44	44	"	"
" " " No. A1-4	1	7/1.32	26	38	47	"	"
" " " No. A1-5	1	"	15	6	6	"	"
" " " No. A1-6	1	7/1.63	24	51	42	"	"
" " " No. A1-7	1	19/1.32	50.5	70	5	"	"
" " " No. A1-9	1	7/1.63	25.2	51	53	"	"
" " " No. A1-10	1	19/1.32	30.5	70	10	"	"
" " " No. A1-15	1	7/1.63	17.8	51	41	"	"
" " " No. B8-1	1	19/1.32	38	70	52	"	"
" " " No. B8-2	1	7/1.63	7.2	23	59	R	"
" " " No. B8-3	1	7/1.63	28	51	39	V	"
" " " No. B8-4	1	19/1.32	57.2	70	38	"	"
" " " No. B8-7	1	19/1.63	58	91	22	"	"
" " " No. B8-8	1	7/1.63	37.8	51	23	"	"
" " " No. B8-13	1	37/2.11	124	200	70	"	"
" " " No. B8-14	1	19/2.11	54.7	128	44	"	"
" " " No. 9-1	1	19/2.11	55.4	"	19	"	"
" " " No. 9-2	1	19/1.63	58	91	6	"	"
" " " No. 9-3	1	37/2.11	31.3	200	60	"	"
" " " No. 9-6	1	19/1.32	25.2	70	43	"	"
" " " No. 9-7	1	19/1.63	57.5	91	19	"	"
" " " No. 9-8	1	7/1.63	35	51	58	"	"
" " " No. 9-9	1	7/1.32	16	38	31	"	"
" " " No. 9-10	1	7/1.63	13	51	44	"	"
" " " No. 9-11	1	7/1.63	34	51	58	"	"
" " " No. 9-12	1	7/1.63	8.5	23	58	R	"
" " " No. 9-13	1	7/1.63	34	51	63	V	"
" " " No. 9-14	1	7/1.63	8.5	23	63	R	"
" " " No. 9-15	1	7/1.32	18	38	75	V	"
" " " No. 9-17	1	7/1.63	11	23	35	R	"
" " " No. 9-18	1	7/1.12	5	16	23	"	"
" E.S.B. " No. E3-12	1	19/1.32	57.7	77	12	V	"
" " " No. E3-13	1	19/1.32	53.1	77	37	"	"
" " " No. E3-14	1	19/1.63	42.5	91	20	"	"

MOTOR CABLES

ALL IMPORTANT MOTORS TO BE ENUMERATED	No.	HP	Sectional Area or No. and Dia. of Strands sq. mm.	In the Circuit	Rule	APPROX. LENGTH (lead only) (M)	INSULATION	PROTECTIVE COVERING
Steering Gear	2	40 HP	19/1.63	61	91	162	V	LC
Cooling Sea Water Pump	1	60	19/2.11	110	128	28	"	"
Piston Cooling F.W. Pump	2	37	19/1.32	66	70	52	"	"
Lub. Oil Pump	2	50	19/2.11	98	128	35	"	"
Fire Pump	2	97	37/2.11	180	200	20	"	"
Nozzle Cooling F.W. Pump	2	3.7	7/0.74	7.3	11	33	R	"
L.O. Pump for Turbo-Charger	2	1.1	3/0.91	2.5	7	18	"	"
F.O. Booster Pump	2	5.5	7/1.12	12.5	16	19	"	"
Reserve Cooling W. Pump	1	60	19/2.11	110	128	26	V	"
Aux. Cooling W. Pump	1	45	19/1.63	83	91	30	"	"
Bilge Pump	1	2.2	3/0.91	5.3	7	25	R	"
Jacket Cooling F.W. Pump	1	45	19/1.63	83	91	32	V	"
G.S. & Bilge Pump	2	22	7/1.63	42	51	62	"	"
Engine Room Vent. Fan	4	5.5	7/1.12	12	16	52-55	R	"
Boiler Room Vent. Fan	2	5.5	7/0.91	12	19	39	V	"
F.O. Purifier for Bunker Oil	3	7.5	7/1.12	14.5	16	18, 23	R	"
F.O. Purifier for Diesel Oil	1	7.5	7/1.12	14.5	16	18	"	"
L.O. Purifier	2	7.5	7/1.12	14.5	16	8	"	"
L.O. Transfer Pump	1	3	7/0.74	7	11	13	"	"
F.O. Transfer Pump	1	11	7/1.32	23	38	5	V	"
F.O. Service Pump	1	3.7	7/0.74	7.5	11	6	R	"
Make Up Air Compressor	1	15	7/1.32	32	38	25	V	"
Donkey Boiler forced draft fan 2	26	1	19/1.32	52	70	61	"	"
F.O. Firing P. for Donkey Boiler 2	4.5	1	7/0.91	8.9	19	10	"	"
Ejector pump for F.W. Gen.	1	5.5HP	7/0.74	7.7	11	18	R	"
Condensate P. for F.W. Gen.	1	1 HP	3/0.91	1.6	7	9	"	"
Extraction P. for F.W. Gen.	1	1 HP	3/0.91	1.6	7	9	"	"
Anchorage service C.S.W.P.	1	3.7	7/0.74	7.5	11	21	"	"

NOTE.—Use Rpt. 43 Continuation Sheet if the above space is insufficient

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.....

**COMPASSES**

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

*M. Yamane* Builder's Signature. Date.....

Have the foregoing descriptions and schedules been verified and found correct..... Yes

Is this installation a duplicate of a previous case..... Yes If so, state name of vessel..... "LISICHANSK"

Plans. Are approved plans forwarded herewith..... No If not, state date of approval..... 9-8-61, 22-2-62, 27-2-62, 6-3-62

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 equipments installed in this ship were examined and tested in accordance with the requirements of the Society's Rules and the approved plans with satisfactory results.

The materials are good and sound.

The generator, motors, etc. were examined and tested under full working conditions and found to be satisfactory.

Total Capacity of Generators..... 920 Kilowatts.

The amount of Fee ... *¥236,800* When applied for, 19.....

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

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

FRIDAY - 3 AUG 1962

Committee's Minute.....

Assigned..... *Su Rpt 1*

*RM*  
 16.7.62  
*[Signature]*  
*CA*

5m.3.58—Transfer. (MADE AND PRINTED IN ENGLAND) (The Surveyors are registered not to write on or below the space for Committee Minute.)

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