

# REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office

Date of writing Report 19th Aug. 1958 When handed in at Local Office 19 Port of YOKOHAMA  
 No. in Survey held at Yokohama Date, First Survey 16th May, 1958 Last Survey 9th Aug. 58  
 Reg. Book. (No. of Visits 10)

on the "RIYADH MARU"  
 Built at Yokohama, Japan By whom built Nippon Kokan K.K., Tsurumi Shipyard Yard No. 8-742 When built 8-1958  
 Owners Japan Petroleum Trading Co., Ltd. Port belonging to Tokyo  
 Installation fitted by Nippon Kokan K.K., Tsurumi Shipyard When fitted 8-1958

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

Plans, have they been submitted and approved Yes System of Distribution 3-Phase 3-Wire Voltage of Lighting 115 Volt  
 Heating 115 Volt Power 445 Volt 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 -

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 Manoeuvring Flat Form (Boiler

Flat) in Engine Room After Side (750 KVA x 2 sets, 125 KVA x 1 set)

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 Manoeuvring Flat Form (Boiler

Flat) in Engine Room Starboard

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 Tripel-Pole Linked Air Circuit-Breaker with Over current Trips in three phases and a reverse power relay

and the switch and fuse gear (or circuit breakers) for each outgoing circuit A triple-pole linked thermal type breaker with over current trips in three phase

Are compartments containing switchboards composed of fire-resisting material or lined as per Rule Yes Instruments on main switchboard A.C. -7 D.C. -3

ammeters A.C. -6 D.C. -3 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 earth indicating

lamps of metal-filament type of each 10 watts 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 Electric Mfg. Co. Ltd. are all fuses labelled Yes If circuit breakers are provided for the generators, at what overload do they operate 150 % and at what current do the reverse current protective-

devices operate 10 % 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 3.37% (3.86V) 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

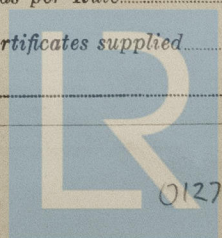
type of cables (if in conduit this should also be stated) in machinery spaces TVLC, TRLC, DRLC, DSRLC, MRLC, galleys DRLC, TRLC

and laundries DRLC State how the cables are supported or protected where not exposed to drip or accumulation of water or oil or risk of mechanical damage cables are supported by clips or straps on brackets, metal hangers or backing plate and where exposed to mechanical damage, they are protected by sheet-iron plating or by steel pipes, cables run along fore and aft gang way and pipe way are protected in steel trunk or robust construction

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

Have refrigeration fan motors been constructed under survey No and test certificates supplied No

Are the motors accessible for maintenance at all times Yes



21/10/58



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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  
Two sets of 200 A.H. storage battery in battery room on navigation bridge deck starboard 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. Two sets of 24V. 200 A.H. 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... 115 V. and compartments where lamps are fitted... Captain's  
Day Rm., state Rm. dining saloon, smoking rm. off's mess rm., crew mess rm., hospital and bed lamp  
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... 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... are the frames effectually earthed... 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...  
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... 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...  
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... are all fuses of an Approved Cartridge Type... make of fuse... "GEMLO-LITE" FUSES... Are the fittings for pump  
rooms, 'tween deck spaces, etc., in accordance with the special requirements for such ships... Are all cables lead covered as per Rule...  
E.S.D., if fitted state maker... location of transmitter and receiver... Double Bottom Frame Nos. 55 - 56  
Spare Gear, if the vessel is for open sea service have spares been provided as per Rule and suitably stored in dry situations...  
Insulation Tests, has the insulation resistance of all circuits and apparatus been tested and found satisfactory...

#### PARTICULARS OF GENERATING PLANT.

DESCRIPTION OF GENERATOR.	No. of	MAKER.	RATED AT				PRIME MOVER.	
			Kw. per Generator	Volts.	Amps.	Revs. per Min.	TYPE	MAKER.
MAIN Generator	2	Meidensha Electric Mfg. Co. Ltd.	600	445	973	1200	Steam Turbine	Ishikawajima Heavy Industries Co., Ltd.
Auxiliary Generator	1	Meidensha Electric Mfg. Co. Ltd.	100	445	162	720	Diesel Engine	Yanmar Diesel Engine Co. Ltd.
EMERGENCY ROTARY TRANSFORMER								

#### GENERATOR CABLES.

DESCRIPTION.	No. of	Kw.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (lead plus return) in 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	2	600	5	30-37/0.103	194.6	260	No. 1 18.5 No. 2 22.0 No. 1 20.0 No. 2 24.0	C	LC
Exciter	2	5	1	30-19/0.052	45.5	70		C	LC
Auxiliary Generator	1	100	1	30-37/0.083	162	200	26.0	C	LC
Exciter	1	3	1	30-7/0.052	27.3	38	27.5	C	LC
EMERGENCY GENERATOR									
ROTARY TRANSFORMER: MOTOR									
GENERATOR									

#### MAIN DISTRIBUTION CABLES (to Auxiliary Switchboards, etc.).

DESCRIPTION.									
From Main Switchboard to Midship Switchboard	1	30-19/0.083	51.6	128	170	C	LC & LA		
- " - to power sectionboard P-1	1	30-7/0.064	20.5	51	41	"	LC		
- " - " - P-2	1	30-7/0.064	34.4	"	55	"	"		
- " - " - P-3	1	30-19/0.052	36.4	70	35	"	"		
- " - " - P-4	1	30-7/0.052	2.7	38	39	"	"		
- " - " - P-5	1	30-19/0.064	56.0	91	24	"	"		
- " - " - P-6	1	30-7/0.064	24.3	51	34	"	"		
- " - " - P-7	1	30-7/0.052	20.5	38	38	"	"		
- " - " - P-8	1	30-7/0.064	37.5	51	19	"	"		
- " - to Testing Board	1	30-7/0.036	5.0	19	13	"	"		
- " - to Shore Connection Box	2	30-37/0.083	150.0	200	30	"	"		

#### 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. ins. or sq. mm.	MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (lead plus return) in Feet.	INSULATION.	PROTECTIVE COVERING.
			In the Circuit.	Rule.			
From Midship SW.BD. to Light. Dist. Panel BD.	1	30-7/0.064	17	51	90	C	LA
- " - " - L-2	1	30-19/0.052	28	70	27	C	LC
- " - " - L-3	1	"	14	"	7	C	"
- " - " - L-4	1	"	20	"	7	"	"
From Main SW.BD. to " - L-5	1	"	25	"	29	"	"
- " - " - L-6	1	"	28	"	41	"	"
- " - " - L-7	1	"	15	"	57	"	"
- " - " - L-8	1	"	34	"	17	"	"
- " - " - L-9	1	"	36	"	42	"	"
- " - " - L-10	1	"	20	"	40	"	"
- " - " - L-11	1	"	29	"	12	"	"
- " - " - L-12	1	"	34	"	34	"	"
- " - to Battery Chrg. & Dischrg. Panel BD.	1	30-7/0.052	16	38	24.5	"	"
From Battery Chrg. & Dischrg. Panel BD. to Dist. Panel BD.	1	20-7/0.036	4.5	17	15	R	"
- " - " - EL-2	1	"	6	"	12	"	"
- " - " - EL-3	1	20-19/0.064	7.7	60	160	"	LA & LC
- " - " - EL-4	1	"	7.9	"	170	"	"
From Emerg. Light Dist. Panel BD. to " - EL-5	1	20-7/0.064	5.0	33	20	"	LC
- " - " - EL-6	1	"	4.6	"	30	"	"
From Main SW.BD. to Interior Comm. Dist. Fuse BD.	1	30-7/0.052	10	38	13	C	"
From Midship SW.BD. to " - IC-1	1	"	"	"	20	"	"
- " - to Navigation Lgt. Teel-Tale Panel	1	20-7/0.036	3	17	27	R	"
From Lgt. Dist. Panel BD. L-7 to " -	1	20-7/0.036	3	"	120	"	LA & LC
- " - to Gyro-Compass	1	30-7/0.029	3	11	25	"	LC
- " - to Wireless Switch Box	1	30-7/0.052	5	38	25	C	"
- " - to " -	1	20-7/0.036	6	17	"	R	"
- " - to Radar Switch Box	1	"	7.3	17	20	"	"

#### MOTOR CABLES.

ALL IMPORTANT MOTORS TO BE ENUMERATED.		No.	B.H.P.						
Steering Gear Motor	2	50	1	30-19/0.083	62	128	60	C	LC
Main Circulating Pump	1	190/110	2	"	260/165	128	40	"	"
Main Condensate Pump	2	35	1	30-19/0.052	40	70	45	"	"
Lubricating Oil Pump	2	40	1	"	48	"	38	"	"
Forced Draught Fan	2	165/90	1	30-37/0.103	200/116	260	77	"	"
General Service	1	60	1	30-19/0.064	75	91	32	"	"
Sea Water Service	1	15	1	30-7/0.052	20	38	58	"	"
Ship's Service Air Compressor	1	30	1	30-7/0.064	36	51	45	"	"
Bilge Pump	1	6	1	30-7/0.036	7.2	19	20	"	"
Vacuum Pump	2	2	1	30-7/0.029	2.7	11	32	"	"
Engine Room Ventilating Fan	5	7.5	1	30-7/0.036	9.7	19	48	"	"
Eng. Rm. Vent. & Boiler Cold Starting Fan	1	10	1	"	13.2	"	"	"	"
Auxiliary Circulating Pump	1	25/15	1	30-7/0.064	31/24	51	33	"	"
Auxiliary Condensate Pump	2	7	1	30-7/0.036	8.8	19	43	"	"
Fuel Oil Service Pump	2	15/7.5	1	30-7/0.052	18.5/12	38	57	"	"
Fresh Water Drain Transfer Pump	2	15	1	"	20	"	31	"	"
Control. Air Compressor	1	12	1	"	14.5	"	40	"	"
Boiler Ignition Pump	1	1	1	30-7/0.029	1.5	11	54	"	"

#### NOTE:-

C - Varnished - Cambric - Insulated  
R - Vulcanised - Rubber - Insulated  
SR - Silicon - Rubber - Insulated  
LA - Lead - Alloy - Sheathed and Armoured  
LC - Lead - Alloy - Sheathed and Steel Wire Braided  
D - Twin - Core  
T - Three - Core  
M - Multi - Core

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



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Lloyd's Register Foundation



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.

*P. Tsunuma*  
NEK TSURUMI SHIDYARD  
YOKOHAMA, JAPAN

Electrical Contractors.

Date 6-9-58

#### COMPASSES.

Have the compasses been adjusted under working conditions.

*H. Tsunuma*  
VICE DIRECTOR  
NEK TSURUMI SHIDYARD  
YOKOHAMA, JAPAN

Builder's Signature.

Date 6-9-58

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. 21-11-57, 11-2-58


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 Electric Equipment of this vessel has been constructed and installed under the supervision of the Society's Surveyors in accordance with the Rules, the approved plans and Secretary's letters.

The Quality of workmanship and materials have been found satisfactory.

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

It is submitted that the Electric Equipment of this vessel is eligible to be classed with this Society and to have the notation of  LMC 8,58.

Total Capacity of Generators

1300

Kilowatts.

¥17,100- 12H APRIL 1958 MEIDENSHA ELEC. Mfg.  
¥83,700- 12H APRIL 1958 MEIDENSHA ELEC. Mfg.

The amount of Fee ...

£233,200.

When applied for.

SEP 22 1958

When received.

19

Travelling Expenses (if any) £

:

19

Surveyor to Lloyd's Register of Shipping.

Committee's Minute

TUESDAY 11 NOV 1958

Assigned

See Rpt. 1.