

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office

18 MAR 1952

Date of writing Report

19

When handed in at Local Office

19

Port of

K O B E

Fujinagata Shipbuilding

Co., Ltd.

Date, First Survey

8th Sept. 1951

Last Survey

12th Sept. 1951

No. in Reg. Book.

(No. of Visits

15

4,978.61

on the

Single Screw Motor Vessel "Kenryu Maru"

Tons

Gross 4,978.61

Net 3,284.36

Built at

Osaka

By whom built

Fujinagata Shipbuilding

Co., Ltd.

Yard No.

S - 25

When built

Sept. 1951

Owners

Inui Kisen Kabushiki Kaisha

Port belonging to

K O B E

Installation fitted by

Fujinagata Shipbuilding Co., Ltd.

When fitted

Sept. 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.

Radar

Yes

Plans, have they been submitted and approved

Yes

System of Distribution

Two Wire

D.C.

Voltage of Lighting

220

Heating

220

Power

220

D.C. or A.C., Lighting

D.C.

Power

D.C.

If A.C. state frequency

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

Yes

, and level compounded under working conditions

Yes

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

Yes

Is the compound winding connected to the negative or positive pole

Negative

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

Starboard 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

Fore middle of 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

Ph 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

Main Switch gear has 3 poles Air Circuit Breaker with

overload trips (positive & negative poles), reverse-current trips (positive poles), and

single pole equalizer switch, and has 3 poles disconnecting knife switches

and the switch and fuse gear (or circuit breakers) for each outgoing circuit

Switch gears have 2 poles air circuit

breaker with over-load trip for outgoing circuit rated above 300 Amperes and 2 poles linked

switch with a fuse on each pole for outgoing circuit rated up to 300 Amperes

Are compartments containing switchboards composed of fire-resisting material or lined as per Rule

Instruments on main switchboard

11

ammeters

3

volts meters

synchronising devices. For compound machines in parallel are the ammeters and reversed current

protection devices connected on the pole opposite to the equaliser connection

Yes

Earth Testing, state means provided

Earth

indicator is adopted two lamps of metal-filament type

switches, Circuit Breakers and Fuses, are they as per Rule

Yes

, are the fuses an Approved Type

Yes

make of fuses

Mitsui Shipbuilding & Engineering 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 reversed current protective devices operate

15 %

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

Yes

ables, are they insulated and protected as per Rule

Yes

, if otherwise than as per Rule are they of an Approved Type

ate maximum fall of pressure between bus bars and any point under maximum load

under 5 Volts

, are the ends of all cables having a sectional

area of 0.01 square inch and above provided with soldering sockets

Yes

Are all paper insulated and varnished cambric insulated

ables 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

No

, if so, are they

adequately protected

Are cables in machinery spaces, galleys, laundries, etc., lead covered

Yes

or run in conduit

Yes (partly)

of the "HR" type

State how the cables are supported or protected

Cable are run and clamped on strong

steel plate and are protected by water tight trunk through exposed deck

pinge all lead sheaths, armouring and conduits effectually bonded and earthed

Yes

Are all cables passing through decks and watertight

kheads provided with deck tubes or watertight glands

Yes

, where unarmoured cables pass through beams, etc., are the holes

ctively bushed

Yes

Refrigerated chambers, are the cables and fittings as per Rule

Yes

008773-008777-0089

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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
Upper 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 and fitted as per Rule **Yes**, are they adequately ventilated **Yes**
state battery capacity in ampere hours **216V 12AH 1 set, 8V 80AH 2 sets, 32V 174AH 2 sets, 24V 174AH 2 sets**
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 **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 **---** 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 **Yes** 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 Co., Ltd.** location of transmitter **Bottom of No.2 Hold** and receiver **Bottom of No.2 Hold**
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 ...	3	Kawaski Dockyard Co., Ltd.	150	225	666	380	Diesel	Hanshin Internal Combustion Engine Mfg. Co., Ltd.
EMERGENCY ...	1	Kawasaki	10	225	45	900	Diesel	Nagoya Works,
ROTARY TRANSFORMER		Fujiidera Works Co., Ltd.						Central Japan Heavy Industries Co., Ltd.

GENERATOR CABLES.

DESCRIPTION.	KILOWATTS.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (lead plus return feet).	INSULA-TION.	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	2	0.4	666	984	28	Varnished Cambric	Lead-Alloy Sheathed Armoured Do.
" " EQUALISER ...		1	0.4		492	7	Do.	
EMERGENCY GENERATOR ...	10	1	0.0225	44.5	75	10	Varnished Cambric	Lead-Alloy Sheathed Armoured
ROTARY TRANSFORMER: MOTOR								
" " GENERATOR...								

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

DESCRIPTION.								
From Main Switchboard To Shore Connection Box "A"	1	0.06	130	143	46	Varnished Cambric	Lead Alloy Sheathed Armoured	
From Shore Connection Box "A" To Shore Connection Box "B"	1	"	"	"	59	"	"	
From Main Switchboard To Distribution Box P-A	1	0.3	360	408	82	"	"	
" " " P-B	1	0.06	107	143	88	"	"	
" " " P-C	1	0.0145	40	60	43	"	"	
" " " P-D	1	0.15	187	260	75	"	"	
" " " P-E	1	0.1	138	202	53	"	"	
" " " P-F	1	0.0225	43	80	67	"	"	
" " " P-G	1	0.0145	52	60	88	"	"	
" " " P-H	1	"	35	60	70	"	"	
" " " Section Box P-A	1	0.15	202	260	33	"	"	
" " " Distribution Box P-J	1	0.2	266	320	135	"	"	
" " " P-K	1	0.15	202	260	92	"	"	
" " " Distribution Fuse Box L-K	1	0.0045	118	15	39	Vulcanized Rubber	"	
" " " L-L	1	0.01	23	31	80	"	"	
" " " L-M	1	0.007	16	24	26	"	"	
" " " Emergency Switchboard	1	0.15	160	260	85	Varnished Cambric	"	
" " " Distribution Fuse Box L-I	1	0.01	262	45	85	"	"	
" " " L-J	1	0.007	163	24		Vulcanized Rubber	"	
From Emergency Switchboard To Distribution Fuse Box L-A	1	0.0045	99	15		"	"	
" " " L-B	1	0.01	24	30	105	"	"	
" " " L-C	1	0.0045	75	15	102	"	"	
" " " L-D	1	0.003	36	10	60	"	"	
" " " L-E	1	0.0045	13.1	15	95	"	"	
" " " L-F	1	0.0045	12.2	15	53	"	"	
" " " Section Fuse Box L-A	1	0.0045	11.5	15	75	"	"	
From Section Fuse Box L-A To Distribution Fuse Box L-G	1	0.0045	11.1	15	17	"	"	
" " " L-H	1	0.003	73	10	16	"	"	
From Emergency Switchboard To Distribution Fuse Box L-I	1	0.003	3.8	10	15.7	"	"	
" " " L-J	1	0.007	16.3	24	100	"	"	
" " " C-A	1	0.0045	99	15	102	"	"	
" " " Wireless Switchboard	1	0.01	27	31	125	"	"	
From Section Box P-A To Distribution Box P-I	1	0.0225	42	80	82	Varnished Cambric	"	
" " " " "	1	0.1		202		"	"	

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 D.F. Box L-A To Wheel House & Instrument Lamp	1	0.003	0.73	10		Vulcanized Rubber	Lead Alloy Sheathed
" Morse Code Signal Lamp	1	0.003	0.27	10		"	"
" Dia 20cm Signal Lamp	1	0.003	2.27	10		"	"
" Electric Heater	1	0.0045	9	15		"	"
" Chart Battery M&RM	1	0.003	1.3	10		"	Lead Alloy Sheathed Armoured
" Gyro Thermotank RM	1	0.003	1.27	10		"	Lead Alloy Sheathed
" Table Fan	1	0.003	0.15	10		"	"
" Electric Heater	1	0.0045	9	15		"	"
" L-B 1/4 Office R E I R	1	0.002	1.36	5		"	Lead Alloy Sheathed Armoured
" 1/2 Office Bath R W C	1	0.002	1.7	5		"	Lead Alloy Sheathed
" 20PE 1/2 Office R 1/2 OFF	1	0.002	1.76	5		"	Lead Alloy Sheathed Armoured
" Captain RM Day Bed Bath	1	0.002	1.34	5		"	Lead Alloy Sheathed
" 1/2 Office Doctor & Med. Box	1	0.002	1.59	5		"	"
" Inside Passage	1	0.002	1.01	5		"	"
" L-C Dinner RM Day & Bed D Store	1	0.002	1.25	5		"	Lead Alloy Sheathed Armoured
" State RM Washing RM	1	0.002	0.84	5		"	"
" Inside & Outside Passage	1	0.002	1.64	5		"	Lead Alloy Sheathed
" L-D 1/2 Cook 1/2 Box No. 1 D. I. er	1	0.002	1.78	5		"	Lead Alloy Sheathed Armoured
" 1/2 E. 1/2 W. C & Bath	1	0.002	2	5		"	Lead Alloy Sheathed
" 1/2 E & 1/2 E	1	0.002	1.3	5		"	"
" 1/2 OFF 1/2 OFF Day & Bed	1	0.002	1.45	5		"	"
" Inside Passage	1	0.002	1.6	5		"	"
" Purser 1/2 STE.	1	0.002	1.75	5		"	"
" Boats 1/2 APPS & Tailay Off.	1	0.002	1.59	5		"	Lead Alloy Sheathed Armoured
" Bulkhead Lamp	1	0.002	0.73	5		"	"
" Outside Passage	1	0.002	1.6	5		"	Lead Alloy Sheathed
" L-E Saloon	1	0.002	2	5		"	Lead Alloy Sheathed Armoured
" Saloon	1	0.002	1.2	5		"	"
" Office Mess & Pantry	1	0.002	1	5		"	"
" Pantry Hot Plate	1	0.003	4.5	10		"	Lead Alloy Sheathed
" Pantry Refrigerator	1	0.003	1.6	10		"	"
" L-F Carp. RDSK 2-QMR 2-OM	1	0.002	1.68	5		"	"
" Fore 3-Sailer R AFT 3-Sailer	1	0.002	1.36	5		"	Lead Alloy Sheathed Armoured
" DE Store Bulkhead W.C	1	0.002	1.92	5		"	Lead Alloy Sheathed
" 2-Cook R 2-Boy R Spare RM	1	0.002	1.5	5		"	Lead Alloy Sheathed Armoured
" Lav. Crew W.C & H.M. SS Pan	1	0.002	1.66	5		"	Lead Alloy Sheathed
" 2-DM 2-DM & NO. 2 BESK	1	0.002	1.8	5		"	"
" 4-Wipers Crew Day RM	1	0.002	1.8	5		"	Lead Alloy Sheathed Armoured
" L-G Crews Mess Laundry	1	0.002	2	5		"	"
" Emergency Gen. RM	1	0.002	2.45	5		"	"
" Dry Prev. Ice Chamber	1	0.002	1.2	5		"	Lead Alloy Sheathed
" Inside Passage	1	0.002	1.6	5		"	Lead Alloy Sheathed Armoured
" L-H Inside & Outside Passage	1	0.002	1.77	5		"	"
" Lobby Dry Prev.	1	0.002	0.5	5		"	"
" Passage Pantry RM DE Store	1	0.002	1.36	5		"	"
" Steering Engine RM	1	0.002	1.7	5		"	"
" L-I Opening (Upper DE)	1	0.003	1.9	10		"	"
" Opening (Bridge & Boat DE)	1	0.003	2.45	10		"	"
" Opening Portable Lamp	1	0.003	1.1	10		"	"
" Bottom Lamp (P.S. & AFT)	1	0.003	3.7	10		"	"
" Bottom Lamp (AFT & S.S.)	1	0.003	3.3	10		"	"
" 2ND DE Lamp (Fore PS & S.S.)	1	0.003	1.5	10		"	"
" 2ND DE Lamp (AFT PS & S.S.)	1	0.003	1.3	10		"	"
" L-J Upper & Bottom Engine Store	1	0.003	2	10		"	"
" Works Shop	1	0.003	1.1	10		"	"
" Tank Heater	1	0.003	0.91	10		"	"
" Shaft Tunner	1	0.003	1.66	10		"	"
" Portable Lamp	1	0.003	1.1	10		"	"
" Portable Lamp	1	0.003	1	10		"	"
" Projector (Eng RM P.S.)	1	0.003	1.66	10		"	"
" Projector (Eng RM S.S.)	1	0.003	1.66	10		"	"
" L-K Projector (Compass Bridge)	1	0.003	2.3	10		"	"
" Projector (")	1	0.003	2.3	10		"	"
" Funnel Illumination (S.S.)	1	0.003	1.36	10		"	"
" Projector (AFT Boat DE)	1	0.003	2.3	10		"	"
" Projector (")	1	0.003	2.3	10		"	"
" Funnel Illumination (P.D.)	1	0.003	1.36	10		"	"
" L-L Cargo Lamp (No. 1 Hatch)	1	0.003	3.4	10		"	"
" Cargo Lamp (")	1	0.003	3.4	10		"	"
" Cargo Lamp (Fore Mast)	1	0.003	2.3	10		"	"
" Cargo Lamp (No. 2 Hatch)	1	0.003	3.4	10		"	"
" Cargo Lamp (")	1	0.003	3.4	10		"	"
" Cargo Lamp (")	1	0.003	3.4	10		"	"
" Cargo Lamp (")	1	0.003	3.4	10		"	"
" E-A Saloon Office Mess Purser	1	0.003	1.05	10		"	Lead Alloy Sheathed
" Bridge DE W.C Bath 1/2 OFF	1	0.003	1.05	10		"	"
" Flying Bridge DE Chart RM	1	0.003	0.84	10		"	Lead Alloy Sheathed Armoured
" Captain 1/2 Office Doctor Pay	1	0.003	1.05	10		"	"
" Bridge DE Inside & Outside Pass.	1	0.003	0.63	10		"	"
" E-B Engine RM Opening & Grating	1	0.003	0.41	10		"	"
" Engine RM Bottom	1	0.003	1.46	10		"	"
" Crew Mess Day W.C Bath	1	0.003	0.84	10		"	Lead Alloy Sheathed
" Upper DE Inside Passage	1	0.0045	4.5	15		"	"
" C-A Fire Detector	1	0.003	0.27	10		"	"
" Helm Indicator	1	0.003	0.45	10		"	"
" Electric Log	1	0.0045	8.2	15		"	"
" Echo Sounder	1	0.0045	8.1	15		"	"
" Gyro Compass	1	0.003	2.7	10		"	Lead Alloy Sheathed Armoured
" Gyro Pilot	1	0.003	3.4	10		"	"
" L-M Cargo Lamp (No. 3 Hatch)	1	0.003	3.4	10		"	"
" Cargo (")	1	0.003	3.4	10		"	"
" Fixed Cargo Lamp	1	0.003	3.4	10		"	"
" Cargo Lamp (No. 4 Hatch)	1	0.003	3.4	10		"	"
" Cargo Lamp (No. 4 Hatch)	1	0.003	3.4	10		"	"



MOTOR CABLES.

ALL IMPORTANT MOTORS TO BE ENUMERATED.						No.	B.H.P.							
From Main Switch Board To Steering Engine MR	2	10	1	0.0025	40	80	243	Varnished Cambric	Lead Alloy Sheathed Armoured					
" " Bullast Pump MR	1	30	1	0.06	118	143	"	"						
" " General Service PHE	1	30	1	0.06	118	143	"	"						
" " Windlass ME	1	60	1	0.15	225	260	"	"						
From Dist. Box PA To L.O. Pump MR	2	45	1	0.15	168	260	"	"						
" " P-A Cylinders Cool. PHE	3	25	1	0.06	95	143	"	"						
" " P-B Harbour Service PHE	2	75	1	0.01	31	45	"	"						
" " P-B Turning ME	1	8	1	0.01	32.5	45	"	"						
" " P-B Fresh Water PHE	1	4	1	0.007	18	30	"	"						
" " P-C Ventilating Fan ME	2	5	1	0.007	21	30	"	"						
" " P-D Air Compressor	2	50	1	0.15	187	260	"	"						
" " P-E L.O. Purifier	1	3	1	0.007	13	30	"	"						
" " P-E L.O. Shift pump	1	3	1	0.007	12.5	30	"	"						
" " P-E F.O. Transfer pump	1	12	1	0.0145	49	60	"	"						
" " P-E F.O. Purifier	2	3	1	0.007	13	30	"	"						
" " P-E F.O. Shift pump	1	5	1	0.007	21	30	"	"						
" " P-E Sanitary pump	1	4	1	0.007	14	30	"	"						
" " P-F Crane	1	75	1	0.007	23	30	"	"						
" " P-F Machine Tool	1	3	1	0.007	12.5	30	"	"						
" " P-G Washing Machine	1	1/4	1	0.003	1.6	10	Vulcanized Rubber	"						
" " P-G Thermal Tank Vent. later	2	5	1	0.007	21	30	Vulcanized Cambric	"						
" " P-G Cooking Fan	1	1	1	0.003	4.5	10	Vulcanized Rubber	"						
" " P-H Refrigerating Machine	1	75	1	0.01	30	45	Vulcanized Cambric	"						
" " P-H R.M. Cooling Pump	1	1	1	0.003	4.5	10	Vulcanized Rubber	"						
From Section Box PA To 3 Ton Cargo Winch ME	2	36	1	0.1	140	225	Vulcanized Cambric	"						
From Dist. Box P-I To 3 Ton Cargo Winch ME	2	36	1	0.1	140	225	"	"						
" " P-J 5 Ton "	2	53	1	0.15	205	260	"	"						
" " P-K 3 Ton "	4	36	1	0.1	140	225	"	"						
" " L-E Electric Refrigerator	1	1/4	1	0.002	1.6	5	Vulcanized Rubber	"						

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.

Fujinagata Shipbuilding Co., Ltd. Osaka, Japan

Y. Sakaki
Managing Director

Electrical Contractors.

Date

COMPASSES.

Have the compasses been adjusted under working conditions

Yes

Fujinagata Shipbuilding Co. Ltd. Osaka, Japan

Y. Sakaki
Managing Director

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

No

If so, state name of vessel

Plans. Are approved plans forwarded herewith

No

If not, state date of approval

5th July, 1951

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 Installation of this vessel has been constructed under Special Survey in accordance with the Rules, Approved plans and Secretary's letters

The workmanship and materials are sound and good.

The Electrical Installations has been examined under working condition on full load to Rules requirements and found satisfactory.

Total Capacity of Generators 460 Kilowatts.

The amount of Fee ...

£ 250,280

When applied for,

19

When received,

19

Travelling Expenses (if any) £

(See Rpt 46)

Committee's Minute

FRI. 30 MAY 1952

Assigned

See F.E. mchly rpt

Shunji Honohara
Surveyor to Lloyd's Register of Shipping.