

REPORT ON ELECTRIC FITTINGS.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office [9 APR 1931]

Date of writing Report 2-2-31 19 When handed in at Local Office 6-2-31 19 Port of Kobe

No. in Survey held at Kobe Date, First Survey 29-9-30 Last Survey 23-1-31 19
Reg. Book. (Number of Visits 8)

on the Steel Steam Tug Ship "RYOYO MARU"

Tons { Gross
Net

Built at Kobe By whom built Kawasaki Dockyard Yard No. 562 When built 1931

Owners Nippon Togyo Kaisha Port belonging to

Electric Light Installation fitted by Kawasaki Dockyard Co. Contract No. 562 When fitted 1931

System of Distribution Two-wire distribution system

Pressure of supply for Lighting 220 volts, Heating 220 volts, Power 220 volts.

Direct or Alternating Current, Lighting Direct current Power Direct current

If alternating current system, state frequency of periods per second ✓

Has the Automatic Governor been tested and found efficient when the whole load is suddenly thrown on or off yes

Generators, do they comply with the requirements regarding rating yes, are they compound wound yes

are they over compounded 5 per cent. yes, if not compound wound state distance between each generator -

Where more than one generator is fitted are they arranged to run in parallel yes, is an adjustable regulating resistance fitted in series with each shunt field yes

Are all terminals accessible, clearly marked, and furnished with sockets yes, are they so spaced or shielded that they cannot be accidentally earthed, short circuited, or touched yes

Are the lubricating arrangements of the generators as per Rule yes

Position of Generators Port side in engine room

is the ventilation in way of the generators satisfactory yes, are they clear of all inflammable material yes

if situated near unprotected woodwork or other combustible material, state distance of same horizontally from or vertically above the generators

No combustible material and -, are the generators protected from mechanical injury and damage from water, steam or oil yes

are their axes of rotation fore and aft yes

Earthing, are the bedplates and frames of the generating plant efficiently earthed yes, are the prime movers and their respective generators in metallic contact yes

Main Switch Boards, where placed near fore bulkhead on port side engine room

If the generators and main switchboard are not placed in the same compartment, is each generator provided with a fuse on each insulated pole as near as possible to the terminals of the generator, additional to that provided on the main switchboard same compartment

Switchboards, are they placed in accessible positions, free from inflammable gases and acid fumes yes

are they protected from mechanical injury and damage from water, steam or oil yes, if situated near unprotected woodwork or other combustible material, state distance of same horizontally from or vertically above the switchboards - and -

are they constructed wholly of durable, non-ignitable non-absorbent materials yes, is all insulation of high dielectric strength and of permanently high insulation resistance yes

if semi-insulating material is used, are all conducting parts insulated from the slab with mica or micaite or other non-hygroscopic insulating material, and the slab similarly insulated from its framework -

and is the frame effectively earthed yes, Are the fittings as per rule regarding:— spacing or shielding of live parts

yes, accessibility of all parts yes, absence of fuses on back of board no fuses on back, proportion of omnibus bars satisfactory

individual fuses to voltmeter, pilot or earth lamp yes, connections of switches yes

Main Switchgear, description of switchgear for each generator and each outgoing circuit, and arrangement of equalizer switches Each generator circuit

three main switches, a double-pole automatic circuit breaker, an ammeter, voltmeter, a potential receptacle, a pilot lamp, field regulator etc. Each outgoing circuit for wind motor, winch motor, fuel-blower motors, emergency

switchgear has a double-pole single throw switch, a single-pole automatic circuit breaker and an ammeter, for other auxiliary machine motors a double-pole single throw switch with fuses. The middle pole of

the double-pole main switches are connected to equalizer busbar

Instruments on main switchboard nine ammeters three voltmeters - synchronising device for paralleling purposes.

Earth Testing, state what means are provided at the main switchboard for indicating the state of the insulation of the system One earth lamp with

selection switch for positive & negative busbars is fitted on generator panel

Switches, Circuit Breakers and Fusible Cut-outs, do these comply with the requirements of the Rules yes

Joint Boxes Section and Distribution Boards, is the construction, protection, insulation, material, and position of these as per rule yes



Cables: Single, twin, concentric, or multicore *single multicore* are the cables insulated and protected as per Tables IV or V of the Rules *yes*

Fall of Pressure, state maximum between bus bars and any point of the installation under maximum load *max 5/8*

Cable Sockets and other connections, are the ends of all cables having a sectional area of 0.04 square inch and above provided with soldering sockets *yes*

Paper Insulated Cables. If cables are paper covered, is the dielectric at the exposed ends of the conductor protected from moisture by being suitably sealed with insulating compound *yes*

Cable Runs, are the cables fixed as far as possible in accessible positions not exposed to drip or accumulation of water or oil, or to high temperature from boilers, steam pipes, uptakes or other hot objects, or to avoidable risk of mechanical damage *yes*

Support and Protection of Cables, state how the cables are supported and protected *Cables secured by brass clips, laid on steel cable plates*

If cables are run in wood casings, are the casings and caps secured by screws *no wood casing*, are the cap screws of brass *—*, are the cables run in separate grooves *—*. If armoured and lead covered cables are secured by metal clips, are the clips spaced as per Table VIII *yes*

Refrigerated Chambers, if lights are fitted, are the cables and fittings in accordance with the special requirements *—*

Joints in Cables, state if any, and how made, insulated, and protected *—*

Watertight Glands and Deck Tubes, are all cables passing through decks and watertight bulkheads provided with deck tubes or watertight glands *yes*

Bushes in Beams and Non-watertight Partitions, where unarmoured cables pass through beams and non-watertight partitions, are the holes efficiently bushed *yes* state the material of which the bushes are made *lead*

Earthing Connections, state what earthing connections are fitted and their respective sectional areas *in metallic contacts by their respective frames or lead plates with ship floor. Sectional area of earthing conductor equal to that of working conductors*, are their connections made as per Rule *yes*

Alternative Lighting, are the groups of lights in the propelling machinery space arranged as per Rule *yes*

Emergency Supply, state position and method of control of the emergency supply and how the generator is driven *7 Kw. emergency generator driven by Diesel engine with switchboard fitted on 2nd deck, starboard, above the engine room and arranged to supply current to all lights, ventilators, etc.*

Navigation Lamps, are these separately wired *yes*, controlled by separate switch and separate fuses *yes*, are the fuses double pole *yes*

are the switches and fuses grouped in a position accessible only to the officers on watch *yes*

has each navigation lamp an automatic indicator as per Rule *yes*

Secondary Batteries, are they constructed and fitted as per Rule *none*

Fittings, are all fittings on weather decks, in stokeholds and engine rooms and where exposed to drip or condensed moisture, watertight *yes*

are any fittings placed in spaces in which goods are liable to be stacked in close proximity to them; if so, how are they protected *—*

are any fittings placed in spaces where inflammable or explosive dust or gases are liable to be present, if so, how are they protected *—*

how are the cables led *—*

where are the controlling switches situated *—*

Searchlight Lamps, No. of *none*, whether fixed or portable *—*, are their fittings as per Rule *—*

Arc Lamps, other than searchlight lamps, No. of *—*, are their live parts insulated from the frame or case *—*, are their fittings as per Rule *—*

Motors, are their working parts readily accessible *yes*, are the coils self-contained and readily removable for replacement *yes*

are the brushes, brush holders, terminals and lubricating arrangements as per Rule *yes*, are the motors placed in well-ventilated compartments in which inflammable gases cannot accumulate and clear of all inflammable material *yes*

are they protected from mechanical injury and damage from water, steam or oil *yes*, are their axes of rotation fore and aft *yes*

if situated near unprotected woodwork or other combustible material, are the motors of the totally enclosed, pipe ventilated forced draught, drip or flame proof type *—*, if not of this type, state distance of the combustible material horizontally or vertically above the motors *—* and *—*

Control Gear and Resistances, are the generator field and motor speed regulators, starters and controllers constructed and fitted as per Rule *yes*

Lightning Conductors, where lightning conductors are required, are these fitted as per Rule *—*

Ships carrying Oil having a Flash Point less than 150° F. Have the special requirements of the Rules been complied with regarding switches, joint boxes, section and distribution boards, protection of cables, method of distribution, lead of cables, lights and fittings *—*

If portable lamps for use in dangerous spaces are supplied, are they of a type approved by the Home Office *—*

PARTICULARS OF GENERATING PLANT.

DESCRIPTION OF GENERATOR	No of	RATED AT				DRIVEN BY	WHERE DRIVEN BY AN INTERNAL COMBUSTION ENGINE	
		Kilowatts	Volts	Amps.	Rev. per Min.		Fuel Used	Flash Point of Fuel
MAIN	3	115	230	500	375	Diesel engine	Heavy Oil	
AUXILIARY								
EMERGENCY	1	7	230	30.5	600	Semi-Diesel	Kerosene	
ROTARY TRANSFORMER								

LIGHTING AND HEATING CONDUCTORS.

Ref. No.	DESCRIPTION	No. of Conductors	Effective Area of each Conductor Sq. Ins.	COMPOSITION OF STRAND		Total Maximum Current in Amps	Approximate Length (Lead and Return) Feet	Insulated with	HOW PROTECTED
				No.	Diameter				
	MAIN GENERATOR	4	0.255	250x2	0.036	1500	60	Paper	Lead covered & banded steel wire armoured
	EQUALISER CONNECTIONS	2	0.255	250	0.036		60	"	"
	AUXILIARY GENERATOR								
	EMERGENCY GENERATOR	2	0.0306	30	0.036	30.5	10	rubber	"
	ROTARY TRANSFORMER								
	AUXILIARY SWITCHBOARDS								
	ENGINE ROOM								
	BOILER ROOM								
	ACCOMMODATION								
	WIRELESS	2	0.0194	19	0.036	32	250	rubber	Lead covered & banded steel wire armoured
	SEARCHLIGHT								
	MASTHEAD LIGHT	3	0.0032	1	0.064	2x0.45	300	"	"
	SIDE LIGHTS	3	0.0032	1	0.064	2x0.45	30	"	"
	COMPASS LIGHTS	2	0.0018	1	0.048	8x0.057	10	"	"
	POOP LIGHTS	3	0.0032	1	0.084	4x0.45	400	"	Lead covered & banded steel wire armoured
	CARGO LIGHTS	2	0.0066	254	0.006	30x1.1	25	"	Keef banded
	ARC LAMPS								
	HEATERS								

MOTOR CONDUCTORS.

Ref. No.	DESCRIPTION	No. of Motors	Effective Area of each Conductor Sq. Ins.	COMPOSITION OF STRAND		Total Maximum Current in Amps	Approximate Length (Lead and Return) Feet	Insulated with	HOW PROTECTED
				No.	Diameter				
	BALLAST PUMP	1	0.153	150	0.036	149	80	rubber	Lead covered & banded steel wire armoured
	MAIN BILGE LINE PUMPS								
	GENERAL SERVICE PUMP								
	EMERGENCY BILGE PUMP								
	SANITARY PUMP	1	0.051	50	0.036	69	60	"	"
	CIRC. SEA WATER PUMPS								
	CIRC. FRESH WATER PUMPS								
	AIR COMPRESSOR								
	FRESH WATER PUMP	1	0.00714	7	0.036	11.2	10	"	"
	ENGINE TURNING GEAR	1	0.051	50	0.036	62	100	"	"
	ENGINE REVERSING GEAR								
	LUBRICATING OIL PUMPS	2	0.051	50	0.036	2x68	20	"	"
	OIL FUEL TRANSFER PUMP	1	0.051	50	0.036	70	20	"	"
	WINDLASS	1	0.255	250	0.036	270	250	Paper	"
	WINCHES, FORWARD	4	0.255	250x2	0.036	2x171	200	"	"
	WINCHES, AFT	6	0.255	250x2	0.036	2x145	250	"	"
	STEERING GEAR—								
	(a) MOTOR GENERATOR								
	(b) MAIN MOTOR	2	0.0306	30	0.036	2x50.5	300	Rubber	"
	WORKSHOP MOTOR	1	0.00714	7	0.036	9.5	50	"	"
	VENTILATING FANS	2	0.00714	7	0.036	2x8	60	"	"
	Winches, Mastels	2	0.255	250	0.036	2x145	80	Paper	"
	Turbo Blower	2	0.255	250x2	0.036	2x60.5	40	"	"
	fuel oil service pump	1	0.00714	7	0.036	19.4	10	Rubber	"
	feeding water pump	3	0.153	150	0.036	3x16.5	20	"	"
	"	1	0.051	50	0.036	60	40	"	"
	Refrigerating machines	3	0.051	50	0.036	3x22	40	"	"
	fuel oil distilling	1	0.00714	7	0.036	8.8	80	"	"
	oil purifier	3	0.00714	7	0.036	3x15.1	80	"	"

All Conductors are of annealed copper conforming to British Standard Specification No. 7.
 The Insulated Conductors are guaranteed to withstand the immersion and resistance tests specified in the Rules.
 The foregoing is a correct description.

H. Tanaka Electrical Engineers. Date 5-2-31

COMPASSES.

Distance between electric generators or motors and standard compass *Between generator & standard compass 80 ft.*

Distance between electric generators or motors and steering compass *Between generator & steering compass 95 ft.*

The nearest cables to the compasses are as follows:—

A cable carrying 5 Amperes 12 feet from standard compass 12 feet from steering compass. *Lighting*

A cable carrying 30 Amperes 35 feet from standard compass 30 feet from steering compass. *(Wires M.G. set)*

• cable carrying _____ Amperes _____ feet from standard compass _____ feet from steering compass.

Have the compasses been adjusted with and without the electric installation at work at full power _____

Has the effect of switching on and off circuits, motors and other electro-magnetic apparatus within the vicinity of the compasses been noted _____

The maximum deviation due to electric currents was found to be _____ degrees on _____ course in the case of the standard compass, and _____ degrees on _____ course in the case of the steering compass.

H. Tanaka Builder's Signature. Date 5-2-31

Is this installation a duplicate of a previous case no If so, state name of vessel _____

General Remarks (State quality of workmanship, opinions as to class, &c. _____)

The electrical installation of this vessel has been fitted under special survey in accordance with the Rules and approved plans; the materials & workmanship are good and on completion the installation was tested under full working conditions and found to be efficient and reliable, in my opinion, for the use of Electric Light.

It is submitted that this vessel is eligible for the RECORD.

Elec Light
J. J. J.
 17/4/31

Total Capacity of Generators 352 Kilowatts.

The amount of Fee ... ¥403.00 : 22/1/1931 When applied for,
 Travelling Expenses (if any) (See Hall Report) 6/2/1931 When received.

A. J. Morris
 Surveyor to Lloyd's Register of Shipping.

Committee's Minute FRI. 17 APR 1931

Assigned Elec Light

Im. 1.23 - Transfer. (The Surveyors are requested not to write on or below the space for Committee's Minute.)



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