

Rpt. 13.

No. 733

# REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

4 FEB 1953

Date of writing Report 2<sup>nd</sup> Sept. 52 When handed in at Local Office Kobe Received at London Office Kobe

No. in Survey held at Habu, Inosshima Date, First Survey 19<sup>th</sup> Nov '51 Last Survey 20<sup>th</sup> July 19 52

Reg. Book. T.S.S. TSUKUSHI MARU (No. of Visits 8135)

Built at Kobe By whom built Kawasaki Kkya. Ltd. Yard No. ✓ When built 1943

Owners Pan Islamic S.S. Co. Ltd. Port belonging to Karachi

Installation fitted by Kawasaki Kkya. Ltd. When fitted 1943

Is vessel equipped for carrying Petroleum in bulk ✓ Is vessel equipped with D.F. Yes E.S.D. ✓ Gy.C. ✓ Sub.Sig. ✓ Radar ✓

Plans, have they been submitted and approved No. System of Distribution No cond. Voltage of Lighting 220

Heating 220 Power 220 D.C. or A.C., Lighting DC Power DC 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 No 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 No Have certificates of test for machines under 100 kw. been supplied No and the results found as per Rule ✓

Position of Generators E/R tank top, Port & Starboard

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 E/R off Bkhd. on

Switch board gallery

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 Bonded Asbestos 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 Triple pole air C/Breakers with 0 current +

Blowers protection

and the switch and fuse gear (or circuit breakers) for each outgoing circuit D.P. air C/Breakers + DP switches

& fuses

Are compartments containing switchboards composed of fire-resisting material or lined as per Rule Yes Instruments on main switchboard 20

ammeters 3 voltmeters ✓ 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 Series connected lamps

Switches, Circuit Breakers and Fuses, are they as per Rule equivalent thereto, are the fuses an Approved Type No. (Japanese Navy carbide type)

make of fuses ✓, are all fuses labelled Yes If circuit breakers are provided for the generators, at what overload do they operate 50%, and at what current do the reversed current protective devices operate 15%

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

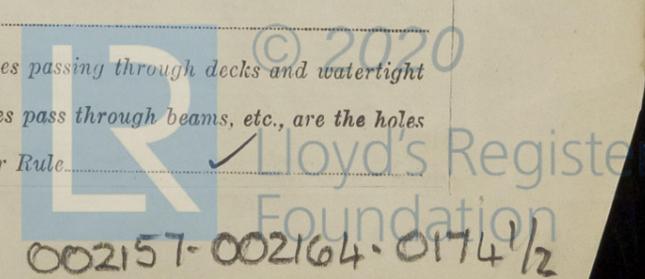
Cables, are they insulated and protected as per Rule Yes, if otherwise than as per Rule are they of an Approved Type ✓

state maximum fall of pressure between bus bars and any point under maximum load < 6%, 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 cables sealed at the ends None 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 Are cables in machinery spaces, galleys, laundries, etc., lead covered Yes or run in conduit ✓

or of the "HR" type ✓ State how the cables are supported or protected Crippled direct to bulkheads

& deckheads or on hangers

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 ✓



Alternative Lighting, are the groups of lights in the engine and boiler rooms arranged as per Rule. Yes Emergency Supply, state position Emergency Generator compartment, Boat 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. ✓, are they adequately ventilated. ✓ state battery capacity in ampère hours. ✓

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 2, whether fixed or portable. Fixed, are they of the carbon arc or of the filament type. C.A.

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. 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. ✓ Have certificates of test for motors under 100 BHP intended for essential sea services been supplied and the results found as per Rule. No

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. ✓ location of transmitter. ✓ and receiver. ✓

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 ...	2	Kawasaki K.K.	500	225	2220	900	Turbine	Kawasaki K.K.
Aux.	1	"	60	225	267	2000	"	"
EMERGENCY ...	1	"	35	225	156	900	oil engine	✓
ROTARY TRANSFORMER	✓							

GENERATOR CABLES.

DESCRIPTION.	KILOWATTS.	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.			
MAIN GENERATOR ...	500	4	1.0"	2220	2380	-	V.I.R	L.S.A.
" " EQUALISER ...	-	2	1.0"	-	1190	-	"	"
Aux. "	60	1	0.5"	267	332	-	"	"
EMERGENCY GENERATOR ...	35	1	0.25"	156	214	-	"	"
ROTARY TRANSFORMER: MOTOR								
" " GENERATOR...								

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

DESCRIPTION.							
Aux. Switchboard (E/R Starboard)	1	1.0	472	595	-	VIR	L.S.A.
" " (" port)	1	"	378	"	-	"	"
" " (Boiler room)	4	"	1400	1720	-	"	"
Ref. machinery 5 panel	1	0.5	116	288	-	"	"
Boat winches	1	1.0	424	595	-	"	"
Aft Cargo winches	1	0.75	228	461	-	"	"
Shore supply	1	0.25	200	214	-	"	"
Fore Cargo winches	1	1.0	256	595	-	"	"
Motor-Alternator	1	0.06	48	83	-	"	"
Charging board	1	0.03	20	53	-	"	"
Windlass	1	1.0	280	595	-	"	"
Emergency Switchboard.	1	0.15	110	152	-	"	"

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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.			
To be regrouped & renewed upon the ship's arrival at Karachi.							
/							

MOTOR CABLES.

ALL IMPORTANT MOTORS TO BE ENUMERATED.	No.	R.W.	□"						
Steering gear	2	15	1	0.1	78	118	-	VIR	L.S.A.
Emergency Bilge pps.	1	24	1	0.15	127	152	-	"	"
F.D. fans	2	60	1	0.5	300	332	-	"	"
I.D. fans	3	35	1	0.25	180	214	-	"	"
F.O. service pps.	2	55	1	0.0145	30	37	-	"	"
Boiler circ. pps.	3	33	1	0.2	165	184	-	"	"
Condensate pps.	3	13	1	0.06	70	83	-	"	"
L.O. pps.	2	30	1	0.2	150	184	-	"	"
Bilge Ballast & San. pps.	2	30	1	0.2	150	184	-	"	"
Fire Blg. C.S. & San. pps	3	24	1	0.15	123	152	-	"	"
M/G. set for SL	2	19.8	1	0.1	90	118	-	"	"
M/A set for vent. fans.	2	12	1	0.06	68	83	-	"	"
F.O. Transfer pps.	2	15	1	0.1	78	118	-	"	"
Rising Compressors.	2	17	1	0.1	88	118	-	"	"
" C.W. pps.	2	4	1	0.01	23	33	-	"	"
" Bin pps.	2	4	1	0.01	23	33	-	"	"
Acc. Blr. F.D. fan.	1	4	1	0.01	23	33	-	"	"
Turning gear	2	3	1	0.007	17	24	-	"	"
L.O. purifier.	1	2.5	1	0.0045	11	15	-	"	"

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.

Electrical Contractors. Date

COMPASSES.

Have the compasses been adjusted under working conditions.

Yes

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. If so, state name of vessel.

No

✓

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

Yes

✓

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

✓

General Remarks. (State quality of workmanship, whether insulation tests, etc., have been made, opinions as to class, etc.)

The electrical installation in this ship has been opened out, examined 'as fitted', repaired as found necessary & tested under working conditions.

All equipment necessary to the safety of the ship has been found or left in good condition. The materials & workmanship are satisfactory.

It is recommended that the installation be acceptable for inclusion in the LMC for the ship subject to all distribution wiring (power & lighting) being renewed on the ship's arrival at Karachi, where it is stated extensive conversion is to be made throughout the accommodation & tween deck spaces, and to all Japanese Navy redundant communication equipment & cables being removed from the ship.

Noted 23-2-53

Total Capacity of Generators 1095 Kilowatts.

The amount of Fee £ 80-0-0

When applied for, 23 JAN 1953  
 LONDON  
 When received, 19

Travelling Expenses (if any) £

S. B. Johnson  
 Surveyor to Lloyd's Register of Shipping.

Committee's Minute

TUES. 3 MAR 1953

Assigned

Sir F. E. McElroy

