

Rpt. 13

No. FE-11678

# REPORT ON ELECTRICAL EQUIPMENT

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Date of writing Report 12th June, 1963 When handed in at Local Office JUL 19 1963 Received at London Office KOBE

No. in Survey held at Mukaishima, Japan Date, First Survey 5th Feb., 1963 Last Survey 28th May, 1963 (No. of Visits 8)

Reg. Book on the Steel, Double Screws, m.s. "505" Tons Gross 310.35 Net 88.36

Built at Mukaishima Japan By whom built Hitachi Shipbuilding & Eng. Co., Ltd., Mukaishima Shipyard Yard No. 3962 When built June, 1963

Owners The Government of the Republic of Indonesia Port belonging to Djakarta

Installation fitted by Hitachi Shipbuilding & Engineering Co., Ltd., Mukaishima Shipyard When fitted June, 1963

Is vessel equipped for carrying Petroleum in bulk No Is vessel equipped with D.F. No E.S.D. Yes Gy.C. No Sub.Sig. No Radar Yes

Plans, have they been submitted and approved Yes System of Distribution Three phase three wire Voltage of Lighting 110V insulated

Heating 220, 110 Power 220, 110 D.C. or A.C. Lighting A.C. Power A.C. If A.C. state frequency 50 c/s

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 - type Self regulated, 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 - Have certificates of test for machines under 100 kw. been supplied and the results found as per Rule Yes Position of Generators Both forward side on floor

in E.R.

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 Forward centre on floor

in E.R.

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 "NO-FUSE" breaker with over current and reverse power protections and a triple pole linked iso. 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 protections.

Are compartments containing switchboards composed of fire-resisting material or lined as per Rule Yes Instruments on main switchboard 3 ammeters 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 Three lamps with metallic filament. Preference Tripping, state if provided - and tested -

Switches, Circuit Breakers and Fuses, are they as per Rule Yes, are the fuses an Approved Type Yes

make of fuses Utsunomiya "GALOLITE", are all fuses labelled Yes If circuit breakers are provided for the generators, at what overload do they operate 270A (115%) for 20 seconds, and at what power current do the reverse power protective devices operate 8.4 KW (15%) for 10 seconds

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 2 volts. Are all paper insulated and varnished cambric insulated cables sealed at the ends -

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 B (PVC)C, R(PVC)C, galleys R(PVC)C

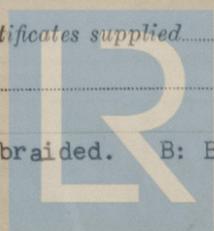
and laundries - State how the cables are supported or protected Generally secured with metal clips on steel saddles, hangers fitted on steel structure and or directly on wood works and protected with heavy gauge steel tubes or sheet steel plates where necessary.

Are all ~~boards~~ 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: R: Rubber Insulated, (PVC): P.V.C. Sheathed C: Steel wire braided. B: Butyl rubber insulated.



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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 Yes  
 Secondary battery; port side aft on nav. bridge deck, charge & discharge. panel; Radio room on nav. bridge deck  
 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 120 AH x 2, 24V Where required to do so does it comply with 1948 International Convention -  
 Lighting, is fluorescent lighting fitted No If so, state nominal lamp voltage - and compartments where lamps are fitted -  
 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 1, whether fixed or portable fixed, are they of the carbon arc or of the filament type 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 - 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 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 -, 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 all cables lead covered as per Rule -  
 E.S.D., if fitted state maker Japan Radio Co. location of transmitter and receiver Fr. No. 48 - 49  
 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
			Kw. per Generator	Volts	Ampères	Revs. per Min.		
MAIN	2	Taiyo Electric Mfg. Co., Ltd.	56	225	180	750	Diesel	Yanmar Diesel Engine Co., Ltd.
EMERGENCY ROTARY TRANSFORMER								

GENERATOR CABLES

DESCRIPTION	No. of	Kw.	CONDUCTORS		MAXIMUM CURRENT IN AMPERES		APPROX. LENGTH (Lead 300 Meters)	INSULATION	PROTECTIVE COVERING
			No. in Parallel per Pole	Sectional Area sq. mm.	In the Circuit	Rule			
MAIN GENERATOR	2	56	2	60	180	260	14	B	(P.V.C.) C.
" " EQUALISER									
EMERGENCY GENERATOR									
ROTARY TRANSFORMER: MOTOR									
" " GENERATOR									

MAIN DISTRIBUTION CABLES (to Auxiliary Switchboards, etc.)

DESCRIPTION	No. of	Kw.	No. in Parallel per Pole	Sectional Area sq. mm.	In the Circuit	Rule	INSULATION	PROTECTIVE COVERING
From M.S.B. to Shore connection box	1	60	1	100	130	8	B	(P.V.C.) C.
" " navigation indicator	1	3.5	1	3.5	2.7	22	R	" (2 core)
" " radio equipment	1	8	1	-	43	18	R	" (2 core)
" " charg. & discharge board	1	2	1	-	16	18	R	"

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

DESCRIPTION	No. in Parallel per Pole	Sectional Area sq. mm.	MAXIMUM CURRENT IN AMPERES		APPROX. LENGTH (Lead 300 Meters)	INSULATION	PROTECTIVE COVERING
			In the Circuit	Rule			
From M.S.B. to power distribution box							
" P-1D-1	1	14	29	50	10	R	(P.V.C.) C
" P-1D-2	1	14	18	50	10	"	"
" P-2D-1	1	22	38	66	22	"	"
" P-2D-2	1	14	19	50	22	"	"
" P-3D-1	1	8	22	36	15	"	"
" P-3D-2	1	14	26	50	15	"	"
From M.S.B. to lighting dist. panel							
" L-1D	1	8	19.5	36	18	"	"
" L-2D	1	8	18.7	36	9	"	"
" L-3D	1	8	15.2	36	25	"	"
" L-4D	1	5.5	10.4	29	15	"	"

MOTOR CABLES

ALL IMPORTANT MOTORS TO BE ENUMERATED	No.	KW		No. in Parallel per Pole	Sectional Area sq. mm.	In the Circuit	Rule	APPROX. LENGTH (Lead 300 Meters)	INSULATION	PROTECTIVE COVERING
		Actual	Design							
From M.S.B. to										
Steering gear	1	1.5	1	1.25	6.6	11	44	R	(P.V.C.) C	
Fire & Bilge pump	1	7.5	1	8	28	36	22	"	"	
General service pump	1	5.5	1	5.5	22	29	26	"	"	
Reserve L.O. Pump & F.O. trans. pump	1	3.7	1	3.5	15	22	33	"	"	
Main compressor	2	5.5	1	5.5	22	29	30	"	"	
Oil pump for hydraulic cargo winch & windlass	1	22	1	50	86	115	45	B	"	
Mooring winch	1	11	1	14	40	50	51	R	"	
Engine room vent. fan	2	2.2	1	2	8.9	16	23,29	"	"	
Cooling sea water pump for generator engine	1	1.5	1	2	6	16	24	"	"	
L.O. Purifire	1	1.5	1	1.25	6	11	23	"	"	
L.O. Priming pump	2	0.2	1	1.25	0.91	11	17,20	"	"	

NOTE.—Use Rpt. 13 Continuation Sheet if the above space is insufficient  
 The all cables are three cores type except as specially noted.

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. Nishida Electrical Contractors. Date 30th May 1963  
 M. NISHIDA  
 Manager of engineering division, HITACHI Shipbuilding & engineering Co., Ltd. Mukaishima Shipyard.

COMPASSES

Yes

Have the compasses been adjusted under working conditions

M. Nishida Builder's Signature. Date 30th May 1963  
 M. NISHIDA Manager of engineering division, HITACHI Shipbuilding & Engineering Co., Ltd. Mukaishima Shipyard.

Have the foregoing descriptions and schedules been verified and found correct. No

Is this installation a duplicate of a previous case. Yes If so, state name of vessel. "504"  
 Plans. Are approved plans forwarded herewith. No If not, state date of approval. 8-1-63, 9-11-62, 24-8-62, 27-8-62  
 (15-4-63 Light. & Commu. Kote)

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 fitted in this ship have been installed under Special Survey in accordance with the requirements of the Society's Rules and the approved plans and found to be so far as could be seen satisfactory.

The materials are good and sound.

The generators, motors, etc. were examined and tested under full working conditions and found to be satisfactory, complying with the Rule requirements.

Total Capacity of Generators 112 Kilowatts.

The amount of Fee ... £87,000- When applied for, 19

Travelling Expenses (if any) £ - : When received, 19

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

Committee's Minute FRIDAY 13 SEP 1963

Assigned Supt 1

5m, 3, 58 - Transfer. (MADE AND PRINTED IN ENGLAND) (The Surveyors are requested not to write or print below the space for Committee Minute.)