

# REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office 31 OCT 1951

Date of writing Report 8-10-1951 When handed in at Local Office 1951 Port of Oslo

No. in Survey held at 25765 on the Wood SS M.V. SANTO Date, First Survey 16-9-50 Last Survey 30-12-1950  
Reg. Book. (No. of Visits)

Tons Gross 163 Net 56

Built at Sopot By whom built J. Morris Yard No. When built 1942

Owners Alf Mortensen Port belonging to Oslo

Installation fitted by Sørø Slip og Mek. Verksted. When fitted 1950

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

Plans, have they been submitted and approved. System of Distribution 2 wire insulated Voltage of Lighting 220

Heating No Power No D.C. or A.C., Lighting Power If A.C. state frequency

Prime Movers, has the governing been found as per Rule when full load is thrown on and off. Are turbine emergency governors fitted with a trip switch. Generators, are they compound wound, and level compounded under working conditions.

if not compound wound state distance between generators and from switchboard. Are the generators arranged to run in parallel. are shunt field regulators provided. Is the compound winding connected to the negative or positive pole.

Position of Generators one Port one Starboard Have machines over 100 kw. 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.

is the ventilation in way of generators satisfactory. are they clear of inflammable material and protected from mechanical injury and damage from water, steam and oil. Switchboards, where are main switchboards placed. Side aft.

are they in accessible positions, free from inflammable gases and acid fumes and protected from mechanical injury and damage from water, steam and oil. what insulation is used for the panels. Sindangs, if of synthetic insulating material is it an Approved Type. 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. Description of Main Switchgear for each generator and arrangement of equaliser switches. DP knife switches and DP fuses

and the switch and fuse gear (or circuit breakers) for each outgoing circuit. D.P. knife switch and DP fuses

Are compartments containing switchboards composed of fire-resisting material or lined as per Rule. Instruments on main switchboard. 2 ammeters. 1 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. Earth Testing, state means provided. E-lamps coupled to earth through switches & fuses.

Switches, Circuit Breakers and Fuses, are they as per Rule. are the fuses an Approved Type. are all fuses labelled. If circuit breakers are provided for the generators, at what make of fuses. and at what current do the reversed current protective devices operate.

Joint Boxes, Section Boards and Distribution Boards, is the construction as per Rule. Cables, are they insulated and protected as per Rule. 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. are the ends of all cables having a sectional area of 0.01 square inch and above provided with soldering sockets. 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. are any cables laid under machines or floorplates. if so, are they adequately protected. Are cables in machinery spaces, galleys, laundries, etc., lead covered. or run in conduit or of the "HR" type. State how the cables are supported or protected. HCA cables clipped to surfaces & trays as practicable in machinery spaces & open deck.

Are all lead sheaths, armouring and conduits effectually bonded and earthed. Are all cables passing through decks and watertight bulkheads provided with deck tubes or watertight glands. where unarmoured cables pass through beams, etc., are the holes effectively bushed. Refrigerated chambers, are the cables and fittings as per Rule.

LIGHTING, HEATING, WIRELESS, NAVIGATION LIGHTS, ETC., CABLES.

Alternative Lighting, are the groups of lights in the engine and boiler rooms arranged as per Rule  Emergency Supply, state position

Navigation Lamps, are they separately wired  controlled by separate double pole switches and fuses  Are the switches and fuses in a position accessible only to the officers on watch  is an automatic indicator fitted  Is an alternative supply provided

Secondary Batteries, are they constructed and fitted as per Rule  are they adequately ventilated

state battery capacity in ampere hours

Fittings, are all fittings on weather decks, in stokeholds and engine rooms and wherever exposed to drip or condensed moisture, weatherproof

Are any fittings installed where readily combustible materials or inflammable or explosive dust or gases are likely to be present

if so, how are they protected

and where are the controlling switches fitted  Are all fittings suitably ventilated

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 , 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

Control Gear and Resistances, are they constructed and fitted as per Rule  Lightning Conductors, where required are they fitted as per Rule

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

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 ...	1		12	220	54	1000	Diesel	Crossley
	1		15	220	68	1000	-	Dugland
EMERGENCY ...								
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 ...		2	2x16	68	13	13	VIR	LCAA.
" " EQUALISER ...								
EMERGENCY GENERATOR ...								
ROTARY TRANSFORMER: MOTOR								
" " GENERATOR...								

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

DESCRIPTION.	No. in Parallel per Pole.	Sectional Area or No. and Dia. of Strands. Sq. ins. or sq. mm.	In the Circuit.	Rule.	INSULATION.	PROTECTIVE COVERING.
All distribution boards.	1	2.5	13.65	15.5	VIR	LCB.

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.			
all lighting.	1	0.75	6	9		VIR	LCB

MOTOR CABLES.

ALL IMPORTANT MOTORS TO BE ENUMERATED.	No.	B.H.P.						
windlass	1	15	1	16	40.8	49	40.	VIR in steel tube.

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.....

..... Builder's Signature. Date.....

Have the foregoing descriptions and schedules been verified and found correct.....

Is this installation a duplicate of a previous case..... If so, state name of vessel.....

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

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 of this vessel has been converted in accordance with the approved plans and Secretary's letters.

Noted *23/10/51*

Total Capacity of Generators..... *57* Kilowatts.

The amount of Fee ... *£100.00* : When applied for, *12-2-1951*  
 Travelling Expenses (if any) £ : : When received, *19*

*E. J. Butler*  
 Surveyor to Lloyd's Register of Shipping.

Committee's Minute..... **TUES. 30 OCT 1951**

Assigned..... *See Rpt 9*

