

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Date of writing Report 9-7-1947 When handed in at Local Office 12 July 1947 Port of Sunderland

No. in Survey held at Sunderland Date, First Survey 28-4-47 Last Survey 4-7-1947
Reg. Book. S.S. "MARTIN CARL" (Number of Vols. 14)

Built at Sunderland By whom built S.P. Acclim & Sons Ltd Yard No. 389 When built 1947
Owners R/S Dampskersk Selskab. Port belonging to Copenhagen

Electrical Installation fitted by Campbell & Selwood Ltd. Contract No. 389 When fitted 1947
Is vessel fitted for carrying Petroleum in bulk No Is vessel equipped with D.F. Yes E.S.D. Yes Gy.C. Yes Sub.Sig. Yes

Have plans been submitted and approved. Yes System of Distribution Non-Wire mounted Voltage of supply for Lighting 110

Heating Power Yes Direct or Alternating Current, Lighting Yes Power Yes If Alternating Current state periodicity Prime Movers,

has the governing been tested and found as per Rule when full load is suddenly thrown on and off. Yes Are turbine emergency governors fitted with a

trip switch as per Rule. Generators, are they compound wound. Yes, are they level compounded under working conditions. Yes,

if not compound wound state distance between generators. and from switchboard. Where more than one generator is fitted are they

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. Have certificates of

test for machines under 100 kw. been supplied. Yes and the results found as per rule. Yes Are the lubricating arrangements and the construction

of the generators as per rule. Yes Position of Generators engine room situated on triced strops

is the ventilation in way of generators satisfactory. Yes are they clear of inflammable material. Yes, if situated

near unprotected combustible material state distance from same horizontally. and vertically. are the generators protected from mechanical

injury and damage from water, steam and oil. Yes, are the bedplates and frames earthed. Yes and the prime movers and generators in metallic

contact. Yes Switchboards, where are main switchboards placed on triced platform in front of engine

room. Are they in accessible positions, free from inflammable gases and acid fumes. Yes, are they protected from mechanical injury and damage from water, steam

and oil. Yes, if situated near unprotected combustible material state distance from same horizontally. and vertically. what insulation

material is used for the panels. Heavy "Sindermys" 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 frame effectually earthed. Yes

Is the construction as per Rule. Yes, including accessibility of parts. Yes, absence of fuses on the back of the board. Yes, individual fuses

to pilot and earth lamps, voltmeters, etc. Yes, locking of screws and nuts. Yes, labelling of apparatus and fuses. Yes, fuses on the "dead"

side of switches. Yes Description of Main Switchgear for each generator and arrangement of equaliser switches a triple-pole (one pole

for equaliser) air break circuit - breaker fitted with 0.5 A.V. current tripping devices.

and for each outgoing circuit a double-pole quick break Rupture switch and double-pole fuse.

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

ammeters. Two voltmeters. synchronising devices. For compound machines in parallel is the ammeter connected on the pole opposite to the

equaliser connection. Yes Earth Testing, state means provided. E lamps coupled to R through test spere.

Switches, Circuit Breakers and Fuses, are they as per Rule. Yes, are the fuses an approved type. Yes, are all fuses labelled as

per Rule. Yes If circuit breakers are provided for the generators, at what overload current did they open when tested. 15%, are the reversed current

protection devices connected on the pole opposite to the equaliser connection. Yes, have they been tested under working conditions, and at what current

did they operate. 30 A. Joint Boxes, Section Boards and Distribution Boards, is the construction and position as per Rule. Yes

Cables, are they insulated and protected as per the appropriate Tables of the Rules. 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. 7.6 V. are the ends of all cables having a sectional area of 0.04

square inch and above provided with soldering sockets. Yes Are paper insulated and varnished cambric insulated cables sealed at the ends. Yes

with insulating compound or waterproof insulating tape. 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 cables laid under machines or floorplates. No, if so, are they adequately protected. Yes Are cables in machinery spaces, galleys, laundries, etc., lead covered. Yes or run in conduit. Yes State how the cables are supported and protected. In machinery spaces, immediately etc. V.C.L.R. R.10. Cables fastened to the surface and protected as required. In accommodation L.C. 7 Lead pipe cables in the surface as in accessible work sample.

Are all lead sheaths, armouring and conduits, effectually bonded and earthed. Yes Refrigerated chambers, are the cables and fittings as per Rule. 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 effectually bushed. Yes and with what material. Lead. Alternative Lighting, are the groups of lights in the engine and boiler rooms arranged as per Rule. Yes Emergency Supply, state position. Yes

Navigation Lamps, are they separately wired. Yes controlled by separate double pole switches. Yes 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 Secondary Batteries, are they constructed and fitted as per Rule. Yes, are they adequately ventilated. Yes

what is the battery capacity in ampere hours. See Remarks

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

and where are the controlling switches fitted. Yes, are all fittings suitably ventilated. Yes

are all fittings and accessories constructed and installed as per Rule. Yes Searchlight Lamps, No. of 1, whether fixed or portable. Yes

are the frames effectually earthed. Yes, are heaters in the accommodation of the convection type. None fitted Motors, are all motors constructed and installed as per Rule. Yes and placed in well-ventilated compartments in which inflammable gases cannot accumulate and free from damage from water, steam and oil. Yes, if situated near unprotected combustible material state minimum distance from same horizontally. Yes and vertically. Yes Are motors coupled to oil fuel transfer and unit 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. Yes Have certificates of test for motors under 100 BHP intended for essential 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. Yes Are all fuses of the cartridge type. Yes are they of an approved type. Yes Are the fittings for pump rooms, tween deck spaces, etc., in accordance with the special requirements for such ships. Yes Are the cables lead covered as per Rule. Yes Spare Gear, if the vessel is for open-sea service have spares been provided as per Rule. Yes, are they 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	RATED AT				DRIVEN BY	WHERE DRIVEN BY AN INTERNAL COMBUSTION ENGINE	
		Kilowatts	Volts	Amps.	Revs. per Min.		Fuel Used	Flash Point of Fuel
MAIN	2	25	110	228		Main Engine	1.	2. Port Diesel at 160°
EMERGENCY								
ROTARY TRANSFORMER								

GENERATOR CABLES.

DESCRIPTION	KILOWATTS	CONDUCTORS		MAXIMUM CURRENT IN AMPERES		APPROX. LENGTH (lead plus return feet)	INSULATED WITH	HOW PROTECTED
		No. in Parallel Per Pole	Sectional Area or No. and Dia. of Strands. Sq. ins. or sq. mm.	In the Circuit	Rule			
MAIN GENERATOR	25	1	37/072	228	246	40	V.C.	L.C.B.
" " EQUALISER		1	19/083		191	20	"	"
" " "	25	1	37/072	228	246	46	"	"
Emergency generator	5	1	19/083		191	24	"	"
EMERGENCY GENERATOR								
ROTARY TRANSFORMER: MOTOR								
" " GENERATOR								

MAIN DISTRIBUTION CABLES.

DESCRIPTION	CONDUCTORS		MAXIMUM CURRENT IN AMPERES		APPROX. LENGTH (lead plus return feet)	INSULATED WITH	HOW PROTECTED
	No. in Parallel Per Pole	Sectional Area or No. and Dia. of Strands. Sq. ins. or sq. mm.	In the Circuit	Rule			
AUX. SWITCHBOARDS AND SECTION BOARDS							
High Voltage Supply Tank Cells	1	7/064	49	75	160	V.C.	L.C.B.
Proximity DB 2B. R. - off above	1	7/044	29	42	80	"	"
Bridge 5th " " D	1	7/044	55	75	150	"	"
Forward DB 2B. R.	1	7/064	48	75	284	"	"
Main DB off 1' off Main Switchboard	1	7/064	36	75	376	"	"
Bridge 5th 1' " "	1	7/044	29	42	120	"	"
Engine Room 5'	1	7/064	47	75	76	"	"
Emergency Lighting	1	19/083	100	191	284	"	"

LIGHTING AND HEATING, ETC., CABLES.

DESCRIPTION	No.	CONDUCTORS	MAXIMUM CURRENT IN AMPERES	APPROX. LENGTH (lead plus return feet)	INSULATED WITH	HOW PROTECTED
WIRELESS	1	7/044	25	42	90	V.C. L.C.B.
NAVIGATION LIGHTS off D.2	1	3/036	3	10	24	"
LIGHTING AND HEATING						
Emergency light - off Main Switchboard	1	7/036		28	150	V.C. L.C.B.
Warehouse DB 15.1' off 18'	1	"	9	"	56	"
Proximity DB 32'	1	"	20	"	15	"
Bridge 5th P. 3.1' " 5'	1	"	15	"	120	"
" " " 5.3.1' " "	1	"	"	"	36	"
" " " 5' off Main Switchboard	1	7/044	32	42	120	"
Main DB off D.1	1	7/036	12	25	12	"
Peep " " D.2	1	"	15	"	30	"
E. Room light	1	"	10	"	60	"
Radar Supply	1	7/044	20	42	200	"
By 10	1	"	30	"	220	"

MOTOR CABLES.

ALL IMPORTANT MOTORS TO BE ENUMERATED.	No.	B.H.P.	CONDUCTORS	MAXIMUM CURRENT IN AMPERES	APPROX. LENGTH (lead plus return feet)	INSULATED WITH	HOW PROTECTED
No. 2 Vent Fan. Prop. M.K.	1	1	7/036	10	28	60	V.C. L.C.B.
" 1 " Prop. M.K.	1	1	"	"	"	80	"
" 3 " 5. " "	1	1	"	"	"	80	"
" 4 " P. Prop. M.K. P.	1	1	"	"	"	30	"
Emergency Vent Fans	2	9	3/036	8	10	144/144	"
Boiler Fan	1	9	7/036	"	28	200	"
Water Pump	1	5	"	5.7	"	42	"
Workshop Motor	1	3	7/044	26	42	100	"
Refrigerating	1	2	"	18	"	200	"
Water Pump - Main Room	1	5	7/036	5.7	28	150	"

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.

CAMPBELL & WHERWOOD, LTD.

PER *W. H. de* Electrical Engineers.

Date 10 July 1947

COMPASSES.

Minimum distance between electric generators or motors and standard compass 10'

Minimum distance between electric generators or motors and steering compass 22'

The nearest cables to the compasses are as follows:—

A cable carrying 15 Ampères 10' feet from standard compass on the feet from steering compass.

A cable carrying 15 Ampères on the feet from standard compass 10' feet from steering compass.

A cable carrying Ampères feet from standard compass feet from steering compass.

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

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

The maximum deviation due to electric currents was found to be Nil degrees on every course in the case of the

standard compass, and Nil degrees on every course in the case of the steering compass.

S. P. AUSTIN & SON, LTD. Builder's Signature.

Date 11.7.47

Young
General Manager.

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 25.4.47

Certificates. Are certificates of test for motors engaged on essential 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 open type

lighting fittings in hot shower bathrooms are of a type unsuitable for steam laden atmosphere; The Owners' attention was drawn to the advisability of watertight pattern to comply with the requirements of section 10, clause c & d, of the electrical rules; but they expressed a preference for the type objected to. The electrical equipment of the vessel has been installed under special survey in accordance with the approved plans and, with the exception of the above, the "rules for electrical equipment": Its materials used are of good quality and design and the workmanship is good: Upon completion the equipment was operated on load with satisfactory results and the insulation resistance of each circuit was measured and found good: This equipment is in my opinion suitable for a closed vessel.

Do
8/8/47

Total Capacity of Generator (2x25 / 1x5) 55 Kilowatts.

The amount of Fee ... £ 35. 10. 0. When applied for, JUL 12 1947

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

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

Committee's Minute 15 AUG 1947

Assigned See F.E. mchy. rph

5m. 4. 33.—Transfer. (MADE AND PRINTED IN ENGLAND.)

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



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