

See Rept 13 dated 11/11/52

Rpt. 13.

No. 92438

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

5 APR 1948

Received at London Office.....

Date of writing Report... 1st Feb 1948... When handed in at Local Office... 6/4/48... Port of... GLASGOW...

No. in Survey held at... GREENOCK... Date, First Survey... 16th DECEMBER '47... Last Survey... 17th MARCH 1948... Reg. Book.

38361 on the... S.S. 'MARGARET CANNIE'... Tons { Gross... 7566 Net... 5573 }

Built at... SUNDERLAND... By whom built... MESSES BARTRAM & SONS LTD... Yard No. ... When built... 1945

Owners... MARGARETA STEAMSHIP CO LTD... Port belonging to... LONDON...

Electrical Installation fitted by... MESSES JOHN WILLIS & SONS... Port... GLASGOW... Contract No. ... When fitted... 1948

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... PLAN ATTACHED... System of Distribution... TWO WIRE... Voltage of supply for Lighting... 220

Heating... 220... Power... 220... Direct or Alternating Current, Lighting... D.C.... Power... D.C.... 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... YES... Generators, are they compound wound... YES... are they level compounded under working conditions... YES

if not compound wound state distance between generators... YES... and from switchboard... 100... 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... ADMIRALTY MACHINES... 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... AUXILIARY MACHINERY SPACE, FORWARD OF BOILER ROOM...

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... YES... and vertically... YES... 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... PORT SIDE AUXILIARY MACHINERY SPACE, NEAR

GENERATORS.

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... YES... and vertically... YES... what insulation

material is used for the panels... FITTINGS MOUNTED ON INSULATED STEEL RODS... 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... YES... Is the frame effectually earthed... YES

Is the construction as per Rule... WITH EXCEPTION... including accessibility of parts... YES... absence of fuses on the back of the board... YES... individual fuses

to pilot and earth lamps, voltmeters, etc... INSTRUMENTS AND PILOT LAMP ON SAME FUSE... 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... DIESEL GENERATORS 1000 AMP D.P.

CIRCUIT BREAKER FITTED WITH OVERLOAD REVERSE CURRENT AND NO VOLT TRIES... STEAM GENERATORS 800 AMP D.P. CIRCUIT BREAKER

FITTED WITH OVERLOAD REVERSE CURRENT AND NO VOLT TRIES...

and for each outgoing circuit... 300 AMP 200 AMP OR 100 AMP D.P. KNIFE PATTERN SWITCHES WITH ADMIRALTY PATTERN

H.R.C. FUSES.

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

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

equaliser connection... NO EQUALISER FITTED... Earth Testing, state means provided... EARTH LAMPS

Switches, Circuit Breakers and Fuses, are they as per Rule... YES... are the fuses an approved type... ADMIRALTY PATTERN... 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... TESTED BY HAND... are the reversed current

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

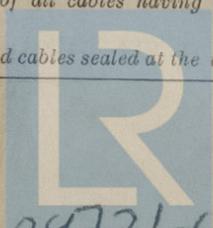
did they operate... 10% F.L.... Joint Boxes, Section Boards and Distribution Boards, is the construction and position as per Rule... YES

Cables, are they insulated and protected as per the appropriate Tables of the Rules... NEW CABLES... if otherwise than as per Rule are they of an approved type... ADMIRALTY PATTERN...

state maximum fall of pressure between bus bars and any point under maximum load... 1.5 VOLTS... 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 cambrie insulated cables sealed at the ends... YES

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Lloyd's Register Foundation

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with insulating compound. or waterproof insulating tape. 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 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. State how the cables are supported and protected. **MAINS - L.C. CABLES ON TRAY OR V.I.P. IN PIPE.**

MACHINERY SPACE - L.C. CABLES CLIPPED TO PERFORATED TRAY.
ACCOMMODATION - L.C. CABLES CLIPPED TO WOODWORK.

Are all lead sheaths, armouring and conduits effectually bonded and earthed. Refrigerated chambers, are the cables and fittings as per Rule.

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. and with what material. **LEAD.** Alternative Lighting, are the groups of lights in the engine and boiler rooms arranged as per Rule. Emergency Supply, state position.

and method of control.

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

what is the 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 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.

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

are their fittings as per Rule. 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 free from damage from water,

steam and oil. if situated near unprotected combustible material state minimum distance from same horizontally. and vertically. 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.

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 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 the cartridge type.

are they of an approved type. 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. Spare Gear, if the vessel is for open sea service have spares been provided as per

Rule. are they suitably stored in dry situations. Insulation Tests, has the insulation resistance of all circuits and apparatus been tested

and found satisfactory.

PARTICULARS OF GENERATING PLANT.

DESCRIPTION OF GENERATOR.	No. of	RATED AT				DRIVEN BY	WHERE DRIVEN BY AN INTERNAL COMBUSTION ENGINE	
		Kilowatts.	Volts.	Ampères.	Revs. per Min.		Fuel Used.	Flash Point of Fuel.
MAIN	2	200	225	890	600	DIESEL ENGINE	OIL	ABOVE 150°
	2	150	225	667	500	STEAM ENGINE		
EMERGENCY								
ROTARY TRANSFORMER								

GENERATOR CABLES.

DESCRIPTION.	KILOWATTS.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (load 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	200	2	6/093	890	928	140	V.C.	L.C.
" " EQUALISER								
MAIN GENERATOR	150	1	9/093	667	620	126	V.C.	L.C.
EMERGENCY GENERATOR								
ROTARY TRANSFORMER: MOTOR								
" " GENERATOR								

MAIN DISTRIBUTION CABLES.

DESCRIPTION.	No. in Parallel Per Pole.	Sectional Area or No. and Dia. of Strands. Sq. ins. or sq. mm.	MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (load plus return feet).	INSULATED WITH.	HOW PROTECTED.
			In the Circuit.	Rule.			
AUX. SWITCHBOARDS AND SECTION BOARDS							
MACHINERY POWER	A7	37/083	227	296	90	V.C.	L.C.
GALLEY SECTION	B6	37/083	73	296	240	V.C.	L.C.
LIGHTING SECTION STRIP	B4	37/083	53	296	216	V.C.	L.C.
MACHINERY POWER	C2	37/083	191	296	60	V.C.	L.C.

LIGHTING AND HEATING, ETC., CABLES.

WIRELESS	B3	19/044	15	53	273	RUBBER	L.C.
NAVIGATION LIGHTS		7/036	5	24	80	RUBBER	L.C.
LIGHTING AND HEATING							
WIRELESS	C3	19/044	15	53	204	RUBBER	L.C.
MACHINERY SPACE LIGHTING	B6	19/052	20	104	132	V.C.	L.C.
MACHINERY SPACE LIGHTING	C5	19/052	15	104	96	V.C.	L.C.
VENTILATION	B7	37/083	20	296	246	V.C.	L.C.
ENGINE ROOM SMALL MOTORS	B5	37/083	24	296	246	V.C.	L.C.
ENGINE ROOM SMALL MOTORS	C7	37/083	40	296	96	V.C.	L.C.
REFRIGERATOR D.B.	C6	19/083	50	191	72	V.C.	L.C.
LIGHTING D.B. PORT	D2	37/083	45	296	90	V.C.	L.C.

MOTOR CABLES.

ALL IMPORTANT MOTORS TO BE ENUMERATED.	No.	B.H.P.						
L.P. COMPRESSORS. B2 + C2	2	61	1	37/083	231	296	110	V.C. L.C.
OIL FUEL TRANSFER PUMP	1	16	1	19/052	63.5	104	140	V.C. L.C.
FRESH WATER PUMP	1	9	1	19/044	36	53	260	RUBBER L.C.
GENERATOR COOLING PUMPS	2	3	1	7/036	13	24	120	RUBBER L.C.
DIESEL OIL TRANSFER PUMP	1	2.25	1	7/036	10	24	50	RUBBER L.C.
HOT WATER PUMP	1	.75	1	7/064	3.7	45	220	RUBBER L.C.
REFRIG. COMPRESSOR	1	7	1	7/044	28.5	31	50	RUBBER L.C.
REFRIG. CIRCULATING PUMP	1	2	1	3/036	9	10	40	RUBBER L.C.
REFRIG. BRINE PUMP	1	1	1	3/029	5	5	40	RUBBER L.C.
AUXILIARY ROOM VENT FANS	3	4	1	7/064	16	45	150	RUBBER L.C.
ENGINE ROOM + BOILER ROOM FANS	6	3.1	1	7/036	12	24	90	RUBBER L.C.
ACCOMMODATION VENT FANS	2	1.75	1	3/036	6.6	10	170	RUBBER L.C.

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.

John Willis & Sons Electrical Engineers. Date *2nd April 1948*
9 John Wood Street Port Glasgow

COMPASSES.

Minimum distance between electric generators or motors and standard compass..... *EIGHTEEN FEET*

Minimum distance between electric generators or motors and steering compass..... *TWELVE FEET.*

The nearest cables to the compasses are as follows:—

A cable carrying *5* Ampères *NINE* feet from standard compass *SIX* feet from steering compass.

A cable carrying *.07* Ampères *LED. INTD.* feet from standard compass *LED. INTD.* feet from steering compass.

A cable carrying *1* 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 *ANY* course in the case of the standard compass, and *NIL* degrees on *ANY* course in the case of the steering compass.

Builder's Signature. Date.....

Is this installation a duplicate of a previous case..... *No* If so, state name of vessel..... *—*

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

Certificates. Are certificates of test for motors engaged on essential services and generators forwarded herewith..... *NOT AVAILABLE.*

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

The electrical installation of this vessel was fitted on board under the supervision and to the requirements of the Admiralty, and has been modified at this time, to suit the alterations made to the vessel for the cargo carrying trade. The existing generator and switchboard are being retained for the present, but all other electrical equipment — with the exception of the items noted in this Report — has been removed or disconnected from the system. A circuit for cargo lighting has been added to the installation, and the lighting circuits, outwith the machinery spaces, have been modified to suit alterations to the accommodation.

On completion of this work the installation was examined, tested under working conditions and insulation resistance measured. All found to be satisfactory.

The electrical installation of this vessel, as now seen, is in safe working condition and is in my opinion such as could be accepted for classification by this Society.

Total Capacity of Generators..... *700* Kilowatts.

The amount of Fee £ *30* : *0* : When applied for,19.....

Travelling Expenses (if any) £ *-* : *15/6* When received.19.....

Noted
J. A. Gardiner
 Surveyor to Lloyd's Register of Shipping.

Committee's Minute..... **GLASGOW 13 APR 1948**

Assigned..... **SEE ACCOMPANYING MACHINERY REPORT**

MLD
 501-430.—Transfer. (MADE AND PRINTED IN ENGLAND.)
 (The Surveyors are requested not to write on or below the space for Committee's Minute.)

