

# REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL) Received at London Office 2 SEP 1948

Date of writing Report 16<sup>th</sup> July 1948 When handed in at Local Office 19... Port of Glasgow

No. in Survey held at GREENOCK Date, First Survey 23<sup>rd</sup> April Last Survey 23<sup>rd</sup> June 1948 (Number of Visits 5)

38360 on the JAMES CLUNIES Tons Gross 7250 Net 5790

Built at W. HARTLEPOOL By whom built W. GRAY & CO LTD Yard No. When built 1944

Owners MARGARETA STEAMSHIP CO LTD Port belonging to LONDON

Electrical Installation fitted by J. WILLIS & SONS Port Glasgow Contract No. When fitted 1948

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

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 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

POSITIVE 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 and the results found as per rule 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 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 PORT SIDE OF 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 and vertically, 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 Is the frame effectually earthed YES

Is the construction as per Rule OF 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. 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 800 AMP D.P. CIRCUIT.

BREAKER FITTED WITH OVERLOAD AND REVERSE CURRENT TRIPS

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 2

ammeters 2 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 EARTH LAMPS 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 FULL LOAD, are the reversed current

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

did they operate 15% FL. Joint Boxes, Section Boards and Distribution Boards, is the construction and position as per Rule ADMIRALTY PATTERN

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 ADMIRALTY PATTERN

state maximum fall of pressure between bus bars and any point under maximum load 9.5 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 cambric insulated cables sealed at the ends YES

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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 CLIPPED AND COVER PLATE FITTED.**

**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.

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, weather proof.  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.

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.
MAIN	2	150	225	667	500	STEAM ENGINE	<input checked="" type="checkbox"/>
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	150	1	91/103	667	738	126	V.C.	L.C.
" " EQUALISER								
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							
MACHINERY POWER	1	37/093	254	343	210	V.C.	L.C.
ENG. ROOM + ACCOM. VENTILATION	1	37/093	135	343	162	V.C.	L.C.
ACCOM. LIGHTING SECTION STD	1	37/093	88	343	105	V.C.	L.C.
ACCOM. LIGHTING SECTION PORT.	1	37/093	114	343	75	V.C.	L.C.
GALLEY SECTION	1	19/083	163	191	240	V.C.	L.C.

**LIGHTING AND HEATING, ETC., CABLES.**

DESCRIPTION.	No.	CONDUCTORS.	MAXIMUM CURRENT IN AMPERES.	APPROX. LENGTH (lead plus return feet).	INSULATED WITH.	HOW PROTECTED.	
WIRELESS	1	19/052	45	104	270	V.C.	L.C.
NAVIGATION LIGHTS	1	7/044	6	31	180	RUBBER	L.C.
LIGHTING AND HEATING							
MACHINERY SPACE LIGHTING	1	19/052	9	104	132	V.C.	L.C.
MACHINERY SPACE LIGHTING	1	19/052	13	104	90	V.C.	L.C.
ACCOM. POWER	1	37/093	124	343	63	V.C.	L.C.
MACHINERY SPACE POWER	1	37/093	222	343	210	V.C.	L.C.

**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.		
L.P. COMPRESSORS B <sub>2</sub> AND C <sub>6</sub>	2	30	1	19/083	114	191	90	V.C.	L.C.
OIL FUEL TRANSFER PUMP	1	16	1	19/052	63	104	240	V.C.	L.C.
F.W. PUMP	1	9	1	19/052	36	104	45	V.C.	L.C.
HOT WATER PUMP	1	3/4	1	3/036	4	10	60	RUBBER	L.C.
REFRIG. COMPRESSOR	1	7	1	7/044	28	31	33	RUBBER	L.C.
REFRIG. BRINE PUMP	1	2	1	3/036	9	10	15	RUBBER	L.C.
BOAT WINCHES	2	14	1	19/052	56	104	270	V.C.	L.C.
AUXILIARY ROOM VENT FANS	2	4	1	7/044	17	31	81	RUBBER	L.C.
ENGINE ROOM + BOILER ROOM FANS	6	3	1	7/044	12.5	31	81	RUBBER	L.C.
ACCOMMODATION VENT FANS	4	3/4	1	3/036	4	10	40	RUBBER	L.C.
ACCOMMODATION VENT FANS	5	1/2	1	3/036	2.8	10	60	RUBBER	L.C.
ENGINE ROOM EXH. FAN	1	9	1	19/052	36	104	45	V.C.	L.C.

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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 *30<sup>th</sup> August 1948*

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 *6* Ampères *9* feet from standard compass *6* feet from steering compass.

A cable carrying *.01* Ampères *LED INTO* feet from standard compass *LED INTO* feet from steering compass.

A cable carrying *7* 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? *YES*. If so, state name of vessel *'MARGARET CLUNIAS'*

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 generators 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, with the exception of 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..... *300* Kilowatts.

*Notes  
11/9/48*

The amount of Fee ... £ *24* : 0 : *0* : 19.....

Travelling Expenses (if any) £ - : *16* : ..... 19.....

*M.C. Gardiner*  
Surveyor to Lloyd's Register of Shipping.

Committee's Minute *GLASGOW 31 AUG 1948*

Assigned *ACCOMPANYING MACHINERY REPORT.*

5m.4.30.—Transfer. (MADE AND PRINTED IN ENGLAND.)  
(The Surveyors are requested not to write on or below the space for Committee's Minute.)

