

REPORT ON ELECTRICAL EQUIPMENT.

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

19 MAY 1943

Received at London Office.....

Date of writing Report 5th APRIL 1943 When handed in at Local Office 17.5.43 Port of GLASGOW

No. in Survey held at GLASGOW Date, First Survey 12th Feb 1943 Last Survey 29th APRIL 1943
Reg. Book. (Number of Visits 17)

86406 on the EMPIRE MIRANDA Tons {Gross.....
Net.....

Built at PORT GLASGOW By whom built MESSRS LITHGOWS LTD Yard No. 983 When built 1943

Owners MINISTRY OF WAR TRANSPORT Port belonging to GREENOCK

Electrical Installation fitted by MESSRS W. MUR GOODFELLOW & CO LTD Contract No. 983 When fitted 1943

Is vessel fitted for carrying Petroleum in bulk — Is vessel equipped with D.F. Yes E.S.D. Wiring Only Gy.C. — Sub.Sig. —

Have plans been submitted and approved Yes System of Distribution Two wire Voltage of supply for Lighting 110

Heating — Power 110 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 — 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 No, 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 — Have certificates of

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

of the generators as per rule Yes Position of Generators In engine 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 In engine room above 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 Sindanyo, 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

150 AMP. D.P. Knife pattern switch with fuses

and for each outgoing circuit 60 AMP & 30 AMP S.P. Knife pattern C.O. switches with a fuse in

each pole

Are compartments containing switchboards composed of fire-resisting material or lined as per Rule — 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 — Earth Testing, state means provided Earth lamps

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 —, are the reversed current

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

did they operate — 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 W.E.,

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 0.04

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

LIGHTING 3.1 VOLTS.
POWER 3.5 VOLTS.



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. Yes, are cables laid under machines or floorplates _____, if so, are they adequately protected _____ Are cables in machinery spaces, galleys, laundries, etc., lead covered Yes or run in conduit _____ State how the cables are supported and protected. MAINS: V.I.R. (W.E) in steel pipe.

MACHINERY SPACE: L.C. & S.W.A. cable clipped to steel tray.

ACCOMMODATION: L.C. cable clipped to woodwork

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

Are all cables passing through decks and watertight bulkheads provided with deck tubs 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 _____

_____ and method of control _____

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 _____, 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. Yes 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. Yes

are all fittings and accessories constructed and installed as per Rule. Yes 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. 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 _____ 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. Yes 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. 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.	Ampères.	Rev. per Min.		Fuel Used.	Flash Point of Fuel.
MAIN	2	15	110	136	630	STEAM ENGINE		
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	15	1	37/083	136	134	60	RUBBER	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							
SALOON SECTION BOARD	1	19/064	45.8	88	360	W.E.	In steel pipe.
ENGINEERS SECTION BOARD	1	19/064	49.5	53	90	W.E.	In steel pipe.

LIGHTING AND HEATING, ETC., CABLES.

WIRELESS	1	7/064	7.5	46	400	W.E.	In steel pipe.
NAVIGATION LIGHTS	1	3/036	4.5	10	40	W.E.	In steel pipe.
LIGHTING AND HEATING							
CREW ACCOMMODATION 7-DECK CARGO LT ²	1	7/064	21	46	372	W.E.	In steel pipe.
FOR'D MASTHOUSE	1	7/064	9.2	31	250	W.E.	In steel pipe.
ENGINE ROOM	1	7/036	12	24	20	W.E.	In steel pipe.
ENGINEERS ACCOMMODATION	1	7/064	22.5	31	10	W.E.	L.C.
SALOON ACCOMMODATION	1	7/064	35.1	46	10	W.E.	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.
			No. in Parallel Per Pole.	Sectional Area or No. and Dia. of Strands. Sq. ins. or sq. mm.	In the Circuit.	Rule.			
DOMESTIC REFRIGERATOR	1	2.5	1	7/064	25.2	46	350	W.E.	In steel pipe.

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.

W. Allan Goodfellow & G. Hill Electrical Engineers. Date *18th May 1943*
G. Hill

COMPASSES.

Minimum distance between electric generators or motors and standard compass 20 FEET

Minimum distance between electric generators or motors and steering compass 16 FEET

The nearest cables to the compasses are as follows:—

A cable carrying .14 Ampères led into feet from standard compass led into feet from steering compass.

A cable carrying 4.5 Ampères 10 feet from standard compass 6 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 any course in the case of the standard compass, and nil degrees on any course in the case of the steering compass.

LITHGOWS LIMITED.

John M. Fullan Secretary Builder's Signature. Date 12/5/43

Is this installation a duplicate of a previous case Yes If so, state name of vessel CAPE HOWE

Plans. Are approved plans forwarded herewith No If not, state date of approval 22/6/42

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 makers' test certificates for generator N° 110415 supplied by the Admiralty shows temperature rise from the armature in excess of that permitted by the Rules. The makers state that the temperature rise will not exceed 63° if the rating is reduced to 13 kW.

It is recommended that the rating of this generator be reduced to 13 kW subject to a satisfactory temperature test being carried out on the generator at this new rating, the name plate altered accordingly and a red line marked on the ammeter at 118 amps.

The electrical equipment of this vessel has been fitted on board under special survey in accordance with the requirements of the M.O.W.T., except as stated above, tested under full working conditions and found satisfactory. The materials and workmanship are good.

Total Capacity of Generators 30 Kilowatts.

The amount of Fee ... £ 22 : 10 :
 Spec. Fee. £ 5 : 12/6
 Travelling Expenses (if any) £ : 19/2

When applied for, at-9th
 When received, _____

J. M. Gardiner
 Surveyor to Lloyd's Register of Shipping.

Committee's Minute GLASGOW 18 MAY 1943

Assigned Sir F. J. B. Murray, M.C., Report

5m. 4.38.—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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