

REPORT ON ELECTRICAL EQUIPMENT

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

27 AUG 1942

Date of writing Report... 31st July 1942 When handed in at Local Office... 24.8.42 Port of... GLASGOW Received at London Office...No. in Survey held at... GREENOCK Date, First Survey... 28.4.42 Last Survey... 27th July 1942 (Number of Visits... 19)

36475 on the... S.S. EMPIRE MIGHT Tons { Gross... 9209 Net...

Built at... GREENOCK By whom built... GREENOCK DOCKYARD CO. LTD. Yard No... 450 When built... 1942

Owners... MINISTRY OF WAR TRANSPORT Port belonging to... GREENOCK

Electrical Installation fitted by... ARTHUR WATSON & DUNDAS, GLASGOW Contract No... 450 When fitted... 1942

Is vessel fitted for carrying Petroleum in bulk... Is vessel equipped with D.F. Yes E.S.D. Yes Gy.C. Yes Sub.Sig. YesHave plans been submitted and approved... Yes System of Distribution... Yes Voltage of supply for Lighting... 110

Heating... Power... 110 Direct or Alternating Current, Lighting... D.C. Power... D.C. If Alternating Current state frequency... Prime Movers,

has the governing been tested and found efficient when the whole load is suddenly thrown on and off... Yes Are turbine emergency governors fitted with atrip 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... 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 constructionof the generators as per rule... Yes Position of Generators... In engine roomis 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 metalliccontact... Yes Switchboards, where are main switchboards placed... In engine room near generatorsare they in accessible positions, free from inflammable gases and acid fumes... Yes, are they protected from mechanical injury and damage from water, steamand oil... Yes, if situated near unprotected combustible material state distance from same horizontally... and vertically... what insulationmaterial is used for the panels... Sindanyo, if of synthetic insulating material is it an Approved Type... Yes, if ofsemi-insulating material (slate or marble) are all conducting parts insulated therefrom as per Rule... Is the frame effectually earthed... YesIs the construction as per Rule... Yes, including accessibility of parts... Yes, absence of fuses on the back of the board... Yes, individual fusesto 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... On 60kW machines:Triple pole circuit breaker with $\frac{1}{2}$ and R.C.T. On 40kW machines: Double polecircuit breaker with $\frac{1}{2}$ and for each outgoing circuit... Between main sw board and lighting sw board: D.P. circuit breaker with $\frac{1}{2}$ Betweenmain sw board and lighting sw board: D.P. circuit breaker with $\frac{1}{2}$ Other circuits D.P. switches with fuses.

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... Yes 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, are the reversed current protection devices connected on the pole opposite to the equaliser connection Yes, have they been tested under working conditions Yes. 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 Yes, state maximum fall of pressure between bus bars and any point under maximum load 6.6 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 exposed ends Yes with insulating compound Yes 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 Yes, if so, are they adequately protected Yes. Are cables in machinery spaces, galleys, lavatories, etc., lead covered Yes or run in conduit Yes. State how the cables are supported and protected Main: H.R. in galvanized pipe. Machinery space: L.C. clipped. Accommodation: L.C. clipped. 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 effectively bushed Yes and with what material Fibre. Alternative Lighting, are the groups of lights in the engine and boiler rooms arranged as per Rule Yes. Emergency Supply, state position Yes and method of control 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. 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 Yes, if so, how are they protected Yes. 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 Yes, whether fixed or portable Yes, are their fittings as per Rule Yes. Heating and Cooking, is the general construction as per Rule Yes. are the frames effectually earthed Yes, are heaters in the accommodation of the convection type Yes. 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. 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. If portable lamps for use in dangerous spaces are supplied, are they of a self-contained battery-fed flameproof type 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 megger 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	Revs. per Min.		
MAIN	2	60	110	545	505	STEAM ENGINE	
	2	40	110	364	550	STEAM ENGINE	
EMERGENCY							
ROTARY TRANSFORMER							

GENERATOR CABLES.									
DESCRIPTION.	KILOWATTS.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (feet 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 GENERATORS	60	1	61/103	545	540	40	V.C.	L.C.	
" " EQUALISER		1	37/103		385	20	V.C.	L.C.	
MAIN GENERATORS	40	1	61/093	364	464	40	V.C.	L.C.	
EMERGENCY GENERATOR									
ROTARY TRANSFORMER: MOTOR									
" " GENERATOR									

MAIN DISTRIBUTION CABLES.									
DESCRIPTION.	KILOWATTS.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (feet 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									
MAIN SWITCHBOARD TO LIGHTING SWITCHBOARD		1	61/093		464	36	V.C.	L.C.	
MAIN SWITCHBOARD TO REFRIG. SWITCHBOARD		2	61/103		21540	48	V.C.	L.C.	
REFRIG. SWITCHBOARD TO LIGHTING SWITCHBOARD		1	61/103		540	24	V.C.	L.C.	

LIGHTING AND HEATING, ETC., CABLES.									
DESCRIPTION.	KILOWATTS.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (feet 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.				
WIRELESS		1	7/052	15	37	460	H.R.	IN CONDUIT	
NAVIGATION LIGHTS		1	7/052	12	37	480	H.R.	IN CONDUIT	
LIGHTING AND HEATING									
REFRIGERATOR ENGINE ROOM		1	7/029	14	15	70	RUBBER	L.C.	
ENGINE ROOM PORT		1	7/044	29	31	100	RUBBER	L.C.	
ENGINE ROOM STARBOARD		1	7/036	23.5	24	60	RUBBER	L.C.	
CREW AFT ACCOMMODATION		1	7/044	22.5	31	200	H.R.	IN CONDUIT	
SIDEHOUSES		1	7/036	24	24	80	H.R.	IN CONDUIT	
SALOON GAS. ACCOMMODATION		1	7/044	36	53	400	H.R.	IN CONDUIT	
FOR'D CARGO LIGHTS		1	7/044	36	53	400	H.R.	IN CONDUIT	
AFT CARGO LIGHTS		1	7/044	36	53	400	H.R.	IN CONDUIT	

MOTOR CABLES.									
ALL IMPORTANT MOTORS TO BE ENUMERATED.	No.	B.H.P.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.		APPROX. LENGTH (feet 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.			
BRINE PUMP N° 1	1	11	1	19/064	80	83	60	RUBBER	L.C.B.
BRINE PUMP N° 2	1	11	1	19/064	80	83	60	RUBBER	L.C.B.
BRINE PUMP N° 3	1	6	1	7/064	44	46	60	RUBBER	L.C.B.
BRINE PUMP N° 4	1	6	1	7/064	44	46	60	RUBBER	L.C.B.
CARGO FAN N° 4 HOLD	1	4 3/4	1	7/064	35	46	170	H.R.	
CARGO FAN N° 4 HOLD	1	4 3/4	1	7/064	35	46	170	H.R.	
CARGO FAN N° 4 LIT. DECK	1	7 1/2	1	19/052	55	64	150	H.R.	
CARGO FAN N° 4 VIT. DECK	1	7 1/2	1	19/052	55	64	120	H.R.	
CARGO FAN N° 3 HOLD	1	7 1/2	1	19/052	55	64	370	H.R.	IN CONDUIT
CARGO FAN N° 3 LIT. DECK	1	4 3/4	1	7/064	35	46	350	H.R.	IN CONDUIT
CARGO FAN N° 2 HOLD	1	7 1/2	1	19/052	55	64	370	H.R.	IN CONDUIT
CARGO FAN N° 2 LIT. DECK	1	4 3/4	1	7/064	35	46	350	H.R.	IN CONDUIT
CARGO FAN N° 2 LIT. DECK	1	4 3/4	1	7/064	35	46	350	H.R.	IN CONDUIT
CARGO FAN N° 2 LIT. DECK	1	4 3/4	1	7/064	35	46	350	H.R.	IN CONDUIT
CARGO FAN N° 2 VIT. DECK	1	4 3/4	1	7/064	35	46	320	H.R.	IN CONDUIT
CARGO FAN N° 2 VIT. DECK	1	4 3/4	1	7/064	35	46	320	H.R.	IN CONDUIT
PURIFIER	1	2 1/2	1	7/036	18.2	24	100	RUBBER	L.C.
REFRIG. ENGINE ROOM VENT FAN	1	1.6	1	7/029	11.5	15	80	RUBBER	L.C.
ENGINE ROOM VENT FANS	2	1.6	1	7/036	23	24	120	RUBBER	L.C.
DOMESTIC REFRIGERATOR	2	6+1.5	1	19/064	55	53	60	RUBBER	L.C.

The foregoing is a correct description.

Date _____

Minimum distance between electric generators or motors and standard compass.

20 feet.

Minimum distance between electric generators or motors and steering compass

15 feet.

The nearest cables to the compasses are as follows:—

A cable carrying 2 Amperes fed into ~~foot from~~ standard compass fed into ~~foot from~~ steering compass.

A cable carrying 12 Amperes 25 feet from standard compass 15 feet from steering compass.

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

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

Have the compasses been adjusted with and without the 1 other electro-magnetic apparatus within the vicinity of the compasses been noted Yes

Has the effect of switching on and off circuits, motors and other electrical apparatus.

1. The deflection due to electric currents was found to be nil degrees on any course in the case of the

standard compass, and nile degrees on any course in the case of the steering compass.

Builder's Signature.

Dat

Is this installation a duplicate of a previous case

If so, state name of vessel

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

The electrical equipment of this vessel has been fitted on board under special survey, tested under working conditions and found satisfactory. All the requirements of the approved Plans and Ministry of War Transport specifications have been carried out. The materials and workmanship are good.

Total Capacity of Generators.....20018.....Kilowatts

The amount of Fee

M.O.W.T. Spec.

Travelling Expenses (if any)

When applied for,

When received.

Surveyor to Lloyd's Register of Shipping.

un, 10, 38. — Transfer.

1038 — Transfer.

Committee's Minute

GLASGOW 25 AUG 1942

Assigned

Transmit to London

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Lloyd's Register
Foundation