

# REPORT ON ELECTRICAL EQUIPMENT

(OTHER THAN FOR THE PROPULSION OF THE VESSEL)

Received at London Office

19 JAN 1943

Date of writing Report.....19..... When handed in at Local Office.....1942..... Port of **HULL**

No. in Survey held at **Selby & Hull** Date, First Survey **14.9.42** Last Survey **24.12.1942**  
Reg. Book. (Number of Visits.....5.....)

on the **Single screw tug EMPIRE ACE** Tons {Gross **27.5**  
Net.....

Built at **Selby & Hull** By whom built **Cookson & Sons Ltd** Yard No. **1255** When built **1942**

Owners **Ministry of War Transport** Port belonging to.....

Electrical Installation fitted by **Wm Broadway & Son Ltd** Contract No. .... When fitted **1942**

Is vessel fitted for carrying Petroleum in bulk **no** Is vessel equipped with D.F. **no** E.S.D. **no** Gy.O. **no** Sub.Sig. **no**

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 **AC** Power **DB** 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..... 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....., are shunt field regulators provided..... 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 starboard side**

....., 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 **Engine room starboard near generators**

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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 **Pindeygo**....., 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 **Double pole push**

**break, knife switches, & double pole fuses**

.....

and for each outgoing circuit **Double pole push break knife switches, & double pole**

**fuses**

.....

Are compartments containing switchboards composed of fire-resisting material or lined as per Rule **Yes** Instruments on main switchboard **1**

ammeters **1** 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 **Lamps connected to earth via switches & fuses**

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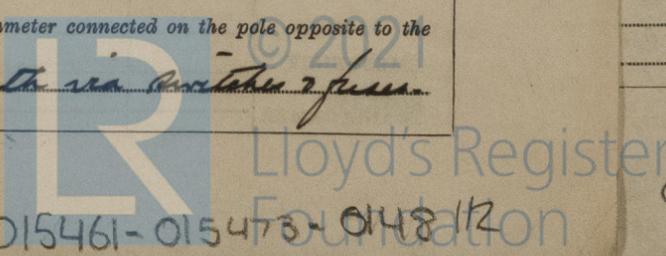
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Switches, Circuit Breakers and Fuses, are they as per Rule... are the fuses an approved type... Yes, are all fuses labelled as per Rule... Yes, are the reversed current protection devices connected on the pole opposite to the equaliser connection... 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... state maximum fall of pressure between bus bars and any point under maximum load... 3V, 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... 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... Yes 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... On perforated steel trays or clipped direct to steelwork in machinery spaces etc - clipped to wooden battens or direct to woodwork in accommodation.

Are all lead sheaths, armoring 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 tubes or watertight glands... Yes, where unarmoured cables pass through beams, etc., are the holes effectively bushed... Yes 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... 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... No Secondary Batteries, are they constructed and fitted as per Rule... are they adequately ventilated... 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... 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... 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... 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... Star mast 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... If portable lamps for use in dangerous spaces are supplied, are they of a self-contained battery-fed flameproof type... 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.		Fuel Used.	Flash Point of Fuel.
MAIN ...	1	6	110	55	500	Steam engine		
EMERGENCY ...								
ROTARY TRANSFORMER								

GENERATOR CABLES.

DESCRIPTION.	KILOWATTS.	CONDUCTORS.		MAXIMUM CURRENT IN AMPERES.		APPROX LENGTH (lead plus return feet).	INSULA-TED 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 ...	6	1	19.052	40	64	24'	VIR	LC.
" " EQUALISER ...								
EMERGENCY GENERATOR ...								
ROTARY TRANSFORMER: MOTOR ...								
" " GENERATOR ...								

MAIN DISTRIBUTION CABLES.

DESCRIPTION.	KILOWATTS.	CONDUCTORS.	MAXIMUM CURRENT IN AMPERES.	APPROX LENGTH (lead plus return feet).	INSULA-TED WITH.	HOW PROTECTED.
AUX. SWITCHBOARDS AND SECTION BOARDS ...						
DG.		7/064	22	46	20	VIR LC.

LIGHTING AND HEATING, ETC., CABLES.

DESCRIPTION.	KILOWATTS.	CONDUCTORS.	MAXIMUM CURRENT IN AMPERES.	APPROX LENGTH (lead plus return feet).	INSULA-TED WITH.	HOW PROTECTED.
WIRELESS ...		7/036	5	24	160	VIR LC+R
NAVIGATION LIGHTS ...		7/029	3	15	160	" "
LIGHTING AND HEATING ...		7/036	10	24	140	" "
Accommodation (midships)		7/044	5	5	-	" "
Accommodation (aft)		7/044	5	5	-	" "

MOTOR CABLES.

ALL IMPORTANT MOTORS TO BE ENUMERATED.	No.	B.H.P.	CONDUCTORS.	MAXIMUM CURRENT IN AMPERES.	APPROX LENGTH (lead plus return feet).	INSULA-TED WITH.	HOW PROTECTED.
Refrigerator	1	1/2	7/029	25	70	VIR	LC
Vent fan	1	3/4	7/036	5	10	"	"

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.

**WM BROADY & SON LTD.**  
 ENGLISH STREET,  
 HULL.

Electrical Engineers. Date 23. 12. 42.

**COMPASSES.**

Minimum distance between electric generators or motors and standard compass 75 ft.

Minimum distance between electric generators or motors and steering compass 70 ft.

The nearest cables to the compasses are as follows:—

A cable carrying .05 Ampères inside feet from standard compass 5 ft. feet from steering compass.

A cable carrying .05 Ampères 5 ft. feet from standard compass inside 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.

FOR COCHRANE & SONS, LTD. Builder's Signature. Date 29/12/42.  
 W. Brady DIRECTOR

Is this installation a duplicate of a previous case Yes If so, state name of vessel EMPIRE SAM

General Remarks (State quality of workmanship, whether insulation tests, etc., have been made, opinions as to class, etc.) The electrical equipment of this vessel was installed under special survey and in accordance with the approved plans and with the specification. The materials used are of good quality and the workmanship is good. On completion the equipment was operated under working conditions with satisfactory results and the insulation resistance of all circuits measured and found good. This equipment is in my opinion suitable for a classed vessel.

Notice  
 22/1/43

Total Capacity of Generators 6 Kilowatts.

The amount of Fee ...	£ 3 : 0 0	When applied for,	16/1/43
+ 25% Spec	15 0		19.43
Travelling Expenses (if any)	£ :	When received,	19.....

W. G. Cornell  
 Surveyor to Lloyd's Register of Shipping.

Committee's Minute TUE 26 JAN 1943  
 Assigned See HULL 5 1866

2m.10.38.—Transfer. (MADE IN ENGLAND.) (The Surveyors are requested not to write on or below the space for Committee's Minute.)

